SUMMER 1952

Handweaver & Craftsman

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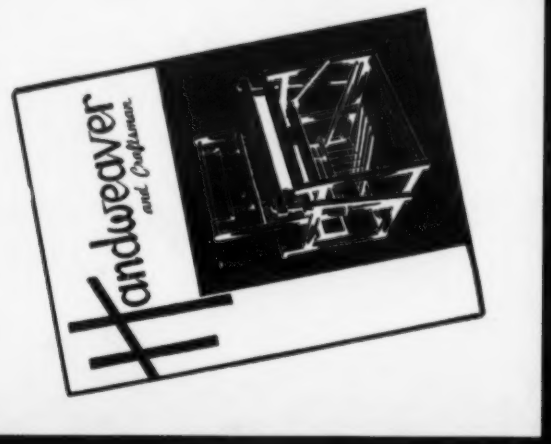
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and Craftsman

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Editorially Speaking

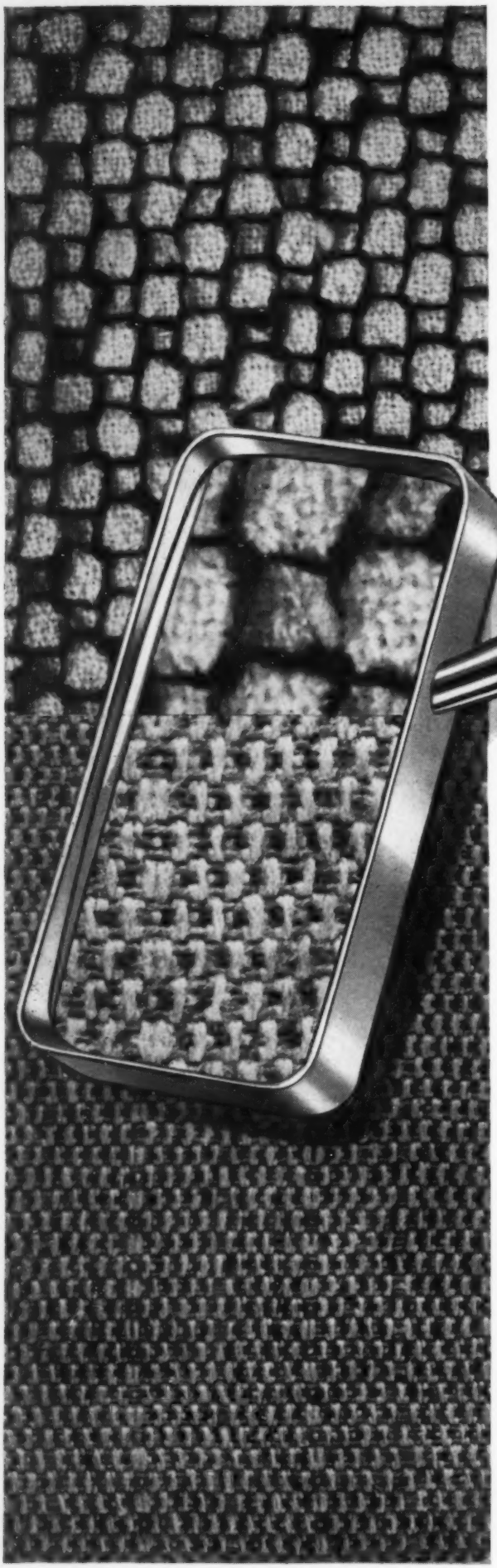
The pages of this issue record many exhibitions of craft work sponsored by small museums all over the country, a most gratifying development for American craftsmen. Of great interest is the joint program of Massachusetts museums, cooperating with the Massachusetts Association of Handicraft Groups, for an annual exhibition of the best in contemporary crafts. The purpose of these exhibitions, it was announced, is to encourage original craft work of high standard which in design is unmistakably of the 20th century. This limitation of purpose is set in order to encourage originality and to recognize those characteristics in design which are related to current tendencies rather than imitation of the styles or fashions of earlier times. These museum directors believe that it is the duty of local museums to encourage contemporary artists and craftsmen in their area, to bring their work to the attention of the public, and to preserve the best of it for future generations. More and more one reads announcements of a fine contemporary textile purchased for a museum's permanent collection. The fine pieces of the past in museum collections were the best contemporary work in their time. With greater appreciation on the part of the craftsmen of the museums' value both in preserving the most significant work of the past and in encouraging craftsmen of the present, both craftsmen and museums, as well as the public, will profit.

July and August bring the craftsmen's fairs, with a few spilling over in September. This year a rich variety awaits the traveler, who will find even a brief stop rewarding. Not only the fairs, but the localities where they are held, offer much of interest. Southern Highlanders will set up shop for five days in the municipal auditorium at Asheville, North Carolina, with many features in addition to crafts for sale. Pennsylvania Guild of Craftsmen, a rapidly growing group, for its fifth annual fair chose Carlisle, a charming and historic town. Everything indicates an event surpassing last year's successful presentation. Not far away is Fort Hunter Museum, with an active weaving center. Nineteenth annual Fair of League of New Hampshire Arts and Crafts again at Belknap Recreational Area, near Gilford, which 12,000 people visited last year. Society of Connecticut Craftsmen and Silvermine Guild of Artists jointly sponsor a new venture at Silvermine, including crafts, architecture, and industrial design. Virginia Highlands Festival again at Abingdon, with workshops added. Vermont fairs at St. Johnsbury in the north and Arlington in the south. Visitors to New England should see the new Craft Center at Worcester, Massachusetts, in historic Salisbury House, offering classes and a sales and information center. Arts and crafts exhibition at Los Angeles County Fair, Pomona, California, is taking on a national air, with entry open to both residents and nonresidents of the state. Handcraft displays at many Canadian fairs and a week of "Craftsmen at Work" at Halifax. Watch the county and state fairs for guild and other weaving exhibits. Chicago Guild at the public library there in September. For dates, see page 38 in this issue.

Do you mention *Handweaver & Craftsman* when you order from advertisers in the magazine? Our advertisers are offering a variety of goods and services and when new customers appear they like to know where they come from. You will find that mentioning the magazine will be helpful. Handweavers have difficulty finding materials and equipment and when an advertiser offers something of value, he will appreciate knowing that readers of this magazine are responding to his efforts.

We are urging you again to send in changes of addresses at the earliest possible moment. A lot of magazines have piled up around the office because they have been sent to an old address, the only one we had, and have been returned by the post office. The post office does not forward magazines unless you leave a deposit for postage.

Again and again and again you will read in this magazine that weavers need to know more about yarns and the fibers from which they are spun. The properties of the fibers, the methods of spinning, and the purpose for which the yarns can best be used are all a necessary part of the weavers' working knowledge.



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SUMMER 1952
Volume 3 *Number* 3

Handweaver & Craftsman

MARY ALICE SMITH,
Editor

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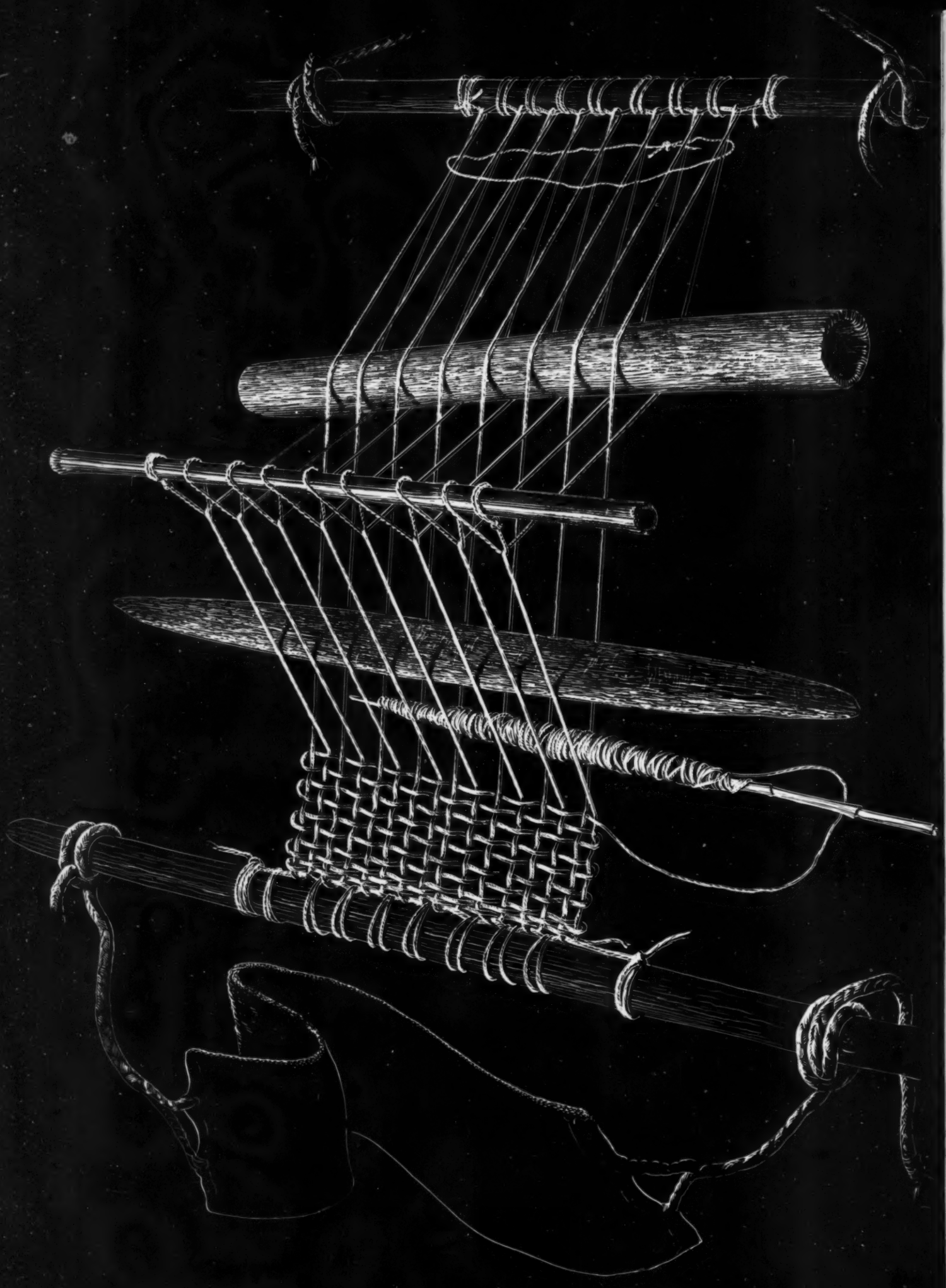
Prehistoric looping technique. Single element construction formed by successive rows of interlocked Figure 8 loops. This technique was widely distributed in many parts of the world and is still in use in New Guinea, and in Central and South America. The first row of loops probably was started over stretched guide cords. The finished products were either rectangular or cylindrical and vary greatly in size. See "Before Heddles were Invented," by Junius B. Bird, page 5. Cover and photographs in article from American Museum of Natural History, New York City.

Picture credits. Pages 4-7, 12, 14, The American Museum of Natural History, New York. Pages 9, 24, 46, Cooper Union, New York. Pages 11, 18, 28-29, Edward Schwartz, New York. Pages 22-23 Donald Cordry, Cuernavaca, Mexico. Page 41, Baltimore Museum of Art. Page 63, Museum of Modern Art, New York.

Handweaver & Craftsman is published quarterly—the 15th of January, April, July, and October—by Handweaver & Craftsman, Inc., at Kutztown, Pennsylvania. Editorial and executive offices, 246 Fifth Avenue, New York 1, New York. Copyright 1952 by Handweaver & Craftsman, Inc. Title registered in U. S. Patent Office. Entered as second class matter at Kutztown, Pennsylvania, July 3, 1951, under act of March 3, 1879. Subscription rates: United States and possessions, $4.00 a year. Single copies $1.00. Canadian postage 50 cents a year extra, Pan American and foreign, $1.00 a year extra. Laurence Urdang, advertising manager, Robert Foster, art and production consultant, Junia Morse, circulation manager, Dorothy Bryan, Pacific Coast editorial and business representative, 2080 Corby Avenue, Santa Rosa, California.



Before Heddles Were Invented

by JUNIUS B. BIRD

Associate Curator of Archaeology
American Museum of Natural History, New York

In view of the importance of textiles in the lives of the majority of mankind, it is curious that the invention of the heddle is not recognized as one worthy to be ranked with, for instance, the discovery of methods for making fire. Both have played major roles in enabling man to utilize environments which otherwise would have been difficult or very discouraging. Both have an antiquity which, though by no means comparable, still remains a mystery, and both seem to have developed long after man was familiar with fire and textiles.

In the case of the heddle, I can foresee the questions which such a suggestion is bound to raise. Weavers will naturally wonder what products would be possible without a heddle and may be inclined to think of pre-heddle products as probably unimportant economically or at least distinctly limited in their variety. Those familiar with the basic simplicity of the heddling devices in native looms may lean to the belief that the idea is so implicit in fabric construction that its solution would have been automatically obvious to anyone trying to assemble yarns into fabrics. They will feel that the problem must have been independently solved innumerable times. Anthropologists will want to know what constitutes evidence for the use or lack of a heddle, and at what cultural level such evidence occurs.

For the weavers, we are showing here some of the products which I believe were made by people unfamiliar with even the most rudimentary heddling equipment. Granted that they are essentially simple products and may not interest or have any application for the modern handweaver, they nevertheless demonstrate a real technical achievement.

For those who would assume the heddle to be obvious, I can only offer the evidence of a long record of fabric production unbroken by the stroke of genius which would have offered freedom from the limitations imposed by the lack of heddling devices. It would seem that too often opinions on the innate ability of mankind to overcome technical difficulties are influenced by the record of the flowering of human inventiveness and ingenuity apparent in our own immediate cultural background. There is still a tendency to overlook the countless millennia during which man's technical achievements, though adequate for survival, seem to have lagged far behind a growing mental ability.

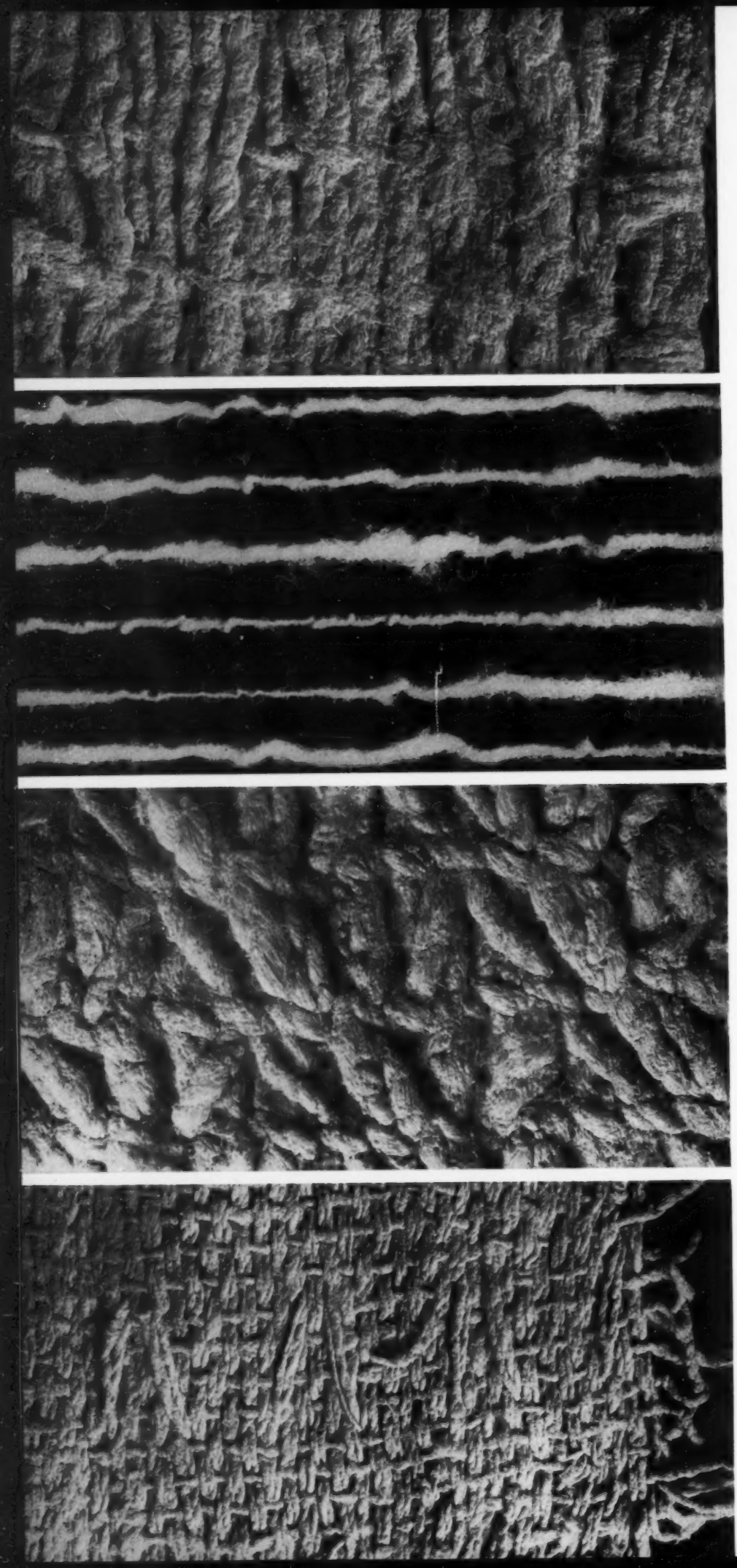
Before answering the more explicit questions of the anthropologists, perhaps I should clarify what I visualize as the basic heddle invention. In its simplest form it is still used in different parts of the world and consists of nothing more than a stick, rod, or rope separating the alternate warps into one shed with a cord lacing so arranged that the lower warp set can be lifted for weft insertion in the opposite shed (see diagram). All subsequent technical improvements in loom heddles have utilized this principle and although the shed rod has been abandoned in favor of direct control of all warps, even the rod might be advantageously used in a mechanical loom.

The diagram of the backstrap loom, on the opposite page shows the arrangement of the heddle and shed rods controlling the warp movements. In spite of the simplicity of the device, it was not invented until many centuries, or even thousands of years, after mankind began making fabrics. The diagram clearly indicates the loom bars, shed rod, heddle rod, battan or sword, bobbin, back strap, warp lashing, heading string, lease cords, warp, and weft.

Proof of the antiquity of this heddling system has been largely dependent on direct evidence: actual examples of looms found in graves and tombs, and pictures of them by ancient artists. From such sources we can be sure that it was known in Egypt prior to 2000 B. C. and in Peru, some centuries B. C.

Less obvious evidence has to be drawn from a study of the fabrics and this will push the dates back even farther. It is of course possible to insert the weft without any mechanical control of the warps and conceivably the product can be identical with one from a heddle-equipped loom. Hence a scrap of plain weave cloth cannot by itself tell us much. Yet if a sufficient number of such pieces are available, one can draw some reasonably valid conclusions as to the process employed. All too frequently writers on early or primitive textiles instead of frankly admitting that identical products can be created by different methods try to set up an arbitrary division by speaking of "true weaving" or the products of the "true loom." Both are unsatisfactory, ambiguous terms without justification and will puzzle any weaver.

In the present instance, the textiles which I believe were all made without heddles come from the Chicama Valley of northern Peru and date from a period starting about 2500 B. C. and ending about 1200 B. C. This collection of several thousand items, now in the American Museum of Natural History in New York, is a good sample of the products of a gregarious people who lived in com-



pact small communities, supporting themselves in part by fishing and in part by simple farming. Culturally these people were extremely primitive if judged solely by their nonperishable artifacts—stone implements of the most simple types made by what is known as rough percussion flaking. They knew nothing of pottery making, did their cooking with firestones and used gourds as containers. Thanks, however, to the extreme desert conditions prevailing in the area we do have their fabrics, and from them can more properly judge their mental and artistic achievements.

As weavers, you will first ask about the fibers used. Almost all are of cotton. Wool from the llamas, alpacas, vicunas and guanacos, so important in later Peruvian fabrics, is completely lacking. Some bast fiber, from a vine related to our common milkweed, was employed to a limited extent either blended with or plied with the cotton. Incidentally, the spinning direction of the cotton was consistently opposite to that employed when spinning the bast, but when the two were blended, the direction of twist was that used for the cotton alone. Yarns spun from the bast alone were always doubled with cotton and in this case we find the structurally curious product—one S twist cotton doubled Z with a Z twist bast.

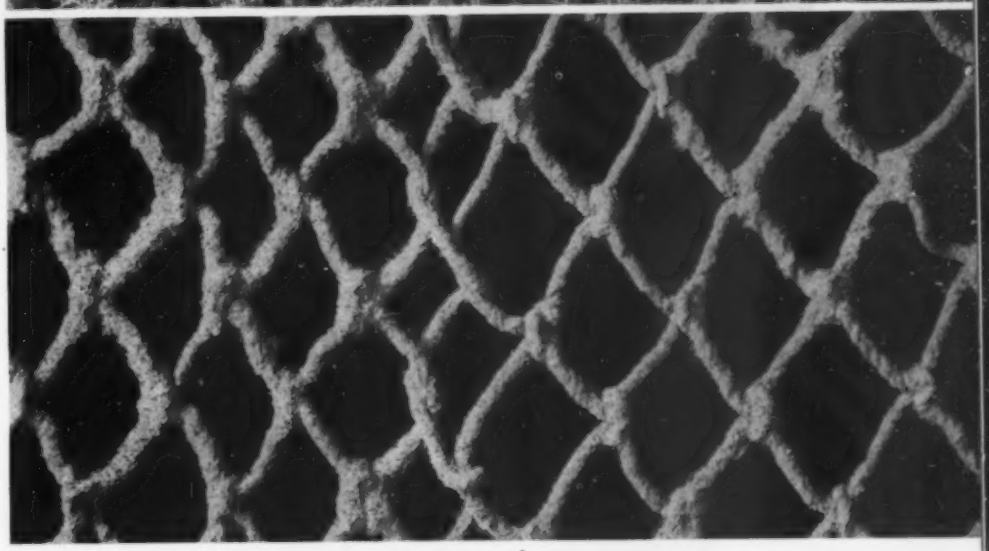
Of the entire series, about 18 per cent are what might be termed single element constructions. Among these the ones here designated as "looping" are predominant, with fishnets nearly as abundant. The same netting tech-

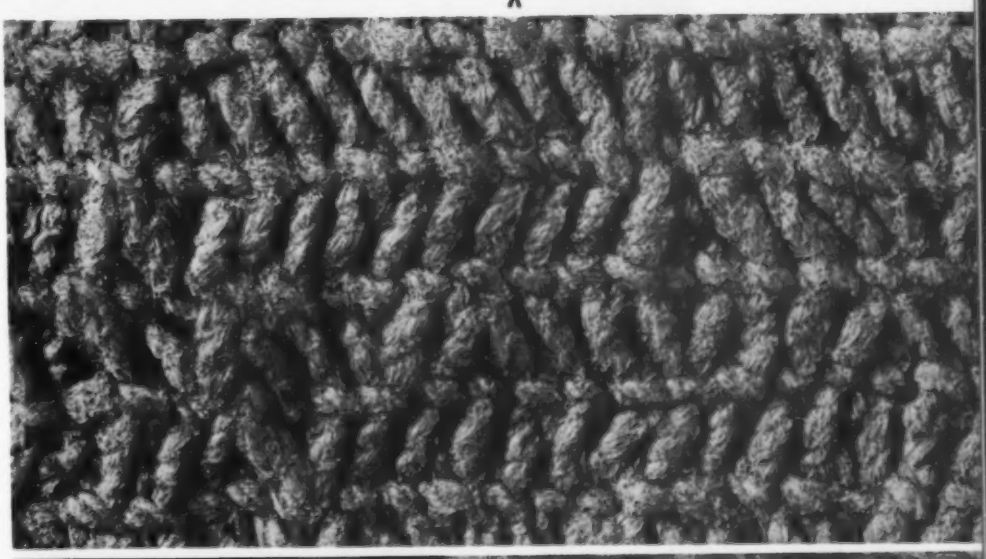
Reading down. The primary or starting selvage of a twined fabric with spaced wefts and paired warps (Fabric badly worn). At the start, the weft pairs are knotted around several pairs of warps (either 2, 4, or 6 warp threads). Single ply cotton yarn. This dates from about 1500 *B.C. and shows the irregular spinning probably achieved by using a slender twig as a spindle. Such singles were used either paired with a two ply yarn in the warp or as weft in woven pieces which have all two ply warp. Basket weave in which the warp floats are transposed across the adjacent pairs. Detail of a small twined fabric with paired warps in which a diagonal effect is achieved by transposing or crossing individual warps.*

nique was also used for patterned pouches and bags and among these and the "looped" specimens one sees a full and elaborate use of both techniques. I am inclined to think of such single element constructions in their simpler forms as among mankind's first products utilizing twisted fibers. Even today there are some primitive groups who, although they produce plenty of cordage, use it for nothing more complicated than the looping techniques.

The other fabrics from this Peruvian collection are, in contrast, multiple element products—by which I mean that warps and wefts are employed. Considering them as a unit, less than 5 per cent are woven, while the balance are twined. In the latter the warps are united by wefts handled in pairs, with a twist of 180 degrees between each warp or pair of warps. Granted that modern ingenuity can produce a machine which will make a twined fabric, it is still obvious that in this early period no mechanical aids were employed. Heddles, for example, would be completely without function for the warps do not have to be moved. The twisting of the weft was managed by

(*Continued on page* 45)





Reading down. A woven fabric of about 1500 *B.C. with single wefts and two ply yarn warps. The warp ends in loops fixed by several rows of compact twining, a typical feature of the contemporary all-twined specimens. Fine mesh fish netting. The knot consistently used in such construction is known as a "cow hitch," quite distinct from the netting knot in use today. Made of two ply cotton in strips about* 25 *centimeters wide and laced together. (See arrow). Twined fabric detail in which patterning is achieved by reversing the direction of the transposed warps. This is an extremely complex pattern in which both warps and wefts were obviously counted off to produce the repeat. This method was used between* 2500 *B.C. and* 1200 *B.C. Terminal selvage of twined fabrics showing wefts knotted close to the last warp pair. The same feature is sometimes seen in woven fabrics in which short wefts, after the insertion of two picks, are tied at one selvage with a simple double overhand knot.*

Illustrations greatly enlarged in various degrees; cover, 5 *times.*

Cotton Plays a Vital Role in Art and Industry

by WALTER HAUSNER

Through the centuries cotton has served both as a medium for great art and as the basis of economic life for many civilizations. No modern spinner or weaver, hand *or* machine, has been able to reproduce the fine cotton fabrics of these ancient civilizations. The designs of some of these primitive peoples make some of our modern fabrics look just a trifle unsophisticated. Today weavers of the primitive tribes in the rain forests of Peru are producing fabrics which compare most favorably with "contemporary" designs.

Cotton is so taken for granted in our own civilization, and its utilitarian uses are so obvious, that many designer-weavers overlook its possibilities both in the fashion and home furnishings fields. Despite the contemporary inability to produce the fine cottons of the past, modern manufacturers of both yarns and fabrics are constantly experimenting and introducing extraordinarily beautiful effects which also have high utilitarian values. The rapid development in the scientific breeding of cotton in the United States and research in the yarn field are opening new opportunities to everyone connected with textiles.

Cotton probably has the most varied and diversified uses of any textile fiber. There is hardly an article of clothing which does not contain some cotton, even if only for sewing on fasteners. There are few fabrics in the upholstery and drapery fields which are made without cotton. Cotton is now important for floor coverings, not only for bath mats and scatter rugs but also for luxury carpeting and rugs. Cottons are growing sheerer and sheerer for summer wear and "winter cottons" are becoming a high fashion item. Cotton is found in the medical and surgical profession; in the upholstered furniture and toy industries; as filler in plastics; as basic raw material in the chemical industry (rayon, paper, cellulose); in road surfacing; and thread in the tire and rubber industry. The cotton plant provides not only the valuable fiber that gives all these important products but supplies also valuable food for man and beast in the

form of edible cottonseed oil and seed cake used for cattle feeding and fertilizing. Cotton is also used in the explosive industry where it is transformed into nitrocellulose. Americans use nearly four times as much cotton as all other apparel fabrics combined and cotton provides about 70 per cent of all fibers used in the United States.

The universal use of cotton can best be explained when the basic characteristics of the fiber are understood. Two of the most important are its long wearing qualities and its easy washability.

Since the handweaver puts in long hours at his loom, the wearing quality of his yarns is important, other things being equal for the fabric in process. Extensive abrasive tests on cotton, including U. S. Army tests, both in the laboratory and in actual use indicate that cotton has the highest wear resistance of all natural textile fibers in common use. Dampness and wetness increase the wearing quality.

Cotton fabrics can be easily washed and, because the fiber has great resistance to heat, can be washed in very hot water and even boiled. Cotton fabrics usually are washed at around 180° to 200° F., dried at temperatures ranging from 200° to 250° and can be ironed with a very hot iron. Cotton garments and other articles hold their shape well and do not melt, shrink, or stretch when ironed.

Cotton has excellent all-round color fastness, including resistance to fading under conditions of exposure to sunlight, laundering, dry cleaning, ironing, and perspiration. Cotton dyes better with the fastest dyes than any other fiber, natural or synthetic. It permits the use of a wide range of dyes for various degrees of fastness or shade requirements.

Cotton has a balanced pliancy which permits construction to be the determining factor in fabric flexibility. It strikes a happy medium, making possible fabrics of high flexibility without limpness, such as voiles and flannels, and fabrics of great firmness without brittleness, such as denims and coverts. It also is very tough, with a high resistance to folding which makes it a favorite for umbrellas, among other uses.

Cotton fabrics are ideal for wear in hot weather because they adequately transmit air and water vapor, allowing evaporation of perspiration quickly. Cotton is quick both to absorb and release moisture. No direct relation has been found to exist between air and water permeability.

The thinner and smoother a fabric is, the cooler it will be. The great strength of cotton and the fact that it can be spun into yarns of web-like fineness permit the construction of very thin fabrics which will resist rigorous wear.

Both construction and fiber are important in the absorbency of textiles. Cotton absorbs moisture and reduces the discomfort of sudden changes of temperature. "Winter cottons," long known to the Chinese, are now appearing on the American market as high fashion.

Cotton's tensile strength is roughly equivalent to structural steel, 100,000 pounds per square inch. Its strength gains 25 per cent when wet. Cotton mummy cloths from Peruvian tombs 3000 years old have been found in good condition, even retaining considerable tensile strength.

Cotton ranks first in stretch stability among major fibers. It is the most useful fiber for construction of textiles with controlled stretch and best resists effects of increases in humidity on extensibility.

Flame resistant treatments do not affect its appearance, texture or serviceability. It repels water, is adaptable to finishes, and can be made mildew resistant.

Cotton, untreated, shrinks the least of any of the commonly used fibers, linen next, rayon next, and wool the most. It can be stabilized by mechanical means alone to control shrinkage within 1 per cent.

Cotton appears long before the ages of recorded history both in Asia and the Western Hemisphere, with the place of origin as yet undetermined. When Columbus found cotton in the West Indies, it was a sure indication to him that he had reached the East. The most recent archaeological explorations in Peru place the use of cotton far back before the invention of looms, as Junius B. Bird of the American Museum of Natural History explains in the preceding article. These cultures developed and disappeared while Europe was still in an age of barbarism.

These first known cotton textiles of Asia and the New World represent a highly finished achievement, as

Left, cotton cloth, printed in colors and painted with gold, India, 18th century. Right, Persian panel, Shah Abbas, early 17th century cut velvet on satin ground, silk, metal, cotton inner wefts, in pastel shades and black, silver thread on gold ground originally covered with gold metallic thread.

the late M. D. C. Crawford points out in his fascinating book, "The Heritage of Cotton." They were "complex and varied in technique, highly developed in esthetic values, the fruit of long ages of development and accomplishments, with standards beyond our latest skill."

Scraps of cotton fabrics have been found in India in excavations at a site of 3,000 B. C. or earlier. The fiber is referred to in the laws of Manu as "karpasi," the sacrificial thread of the Brahmans. Herodotus in 445 B. C. describes the cotton tree in India and Theophrastus in 350 B. C. gives definite statements about its cultivation in India.

There is some inconclusive evidence that cotton was in use in Egypt around 2,000 B. C. King Solomon used cotton in 950 B. C. as hangings for the Temple. It is referred to in the Bible (Esther 1. 6) as "kirbas" or "karpas," in describing the green draperies in the palace of Susa. Cotton fabrics coming from Phoenicia, Egypt, and perhaps India, were brought to the Mediterranean area in the 4th century B. C. by Alexander the Great's troops. In Ancient Rome, cotton was known in the Augustan age as "carbasa" and used in curtains and tents. In the Far East, cotton was introduced into Japan and China from India where cotton growing and manufacture had reached a very high degree of perfection. In Japan, cotton cultivation became general in the 18th century. In China the plant was grown since about the 7th century, originally cultivated only as an ornamental shrub. Around 1,000 A. D. it was also grown commercially. About 500 years ago the cultivation was started in Korea where due to the more favorable climate, a finer and better fiber grew than in China.

French interpretation of Indian cotton designs, woodblock in red on handwoven cotton, 18th century, from the Oberkampf factory at Jouy. From the collection of Agnes J. Holden, shown at the City Art Museum, St. Louis, and elsewhere.

French printed cotton, Toile de Jouy, blue on white from woodblock, very rare, 1760. French interpretation in fabric of Oriental influence strongly felt in 18th century European art. Originally from the collection of Agnes J. Holden, New York City, now in the Winterthur Museum, Wilmington, Delaware.

In Europe cotton was first cultivated by the Moors in Spain in the 9th century A. D. and in Sicily by the Arabs at about the same time. The real introduction of the cotton plant to Europeans and the manufacture of the fiber into cloth was due to the Mohammedans who spread the knowledge throughout the Mediterranean area in the 14th century.

However, cotton was not widely known or used in Europe until the 17th century, when the Dutch and English East India Companies brought the beautiful painted and dyed fabrics from India. Until the defeat of the Spanish Armada by the English in 1599 the seas had been closed to English ships. The Portuguese had been the first to trade with the Indies and had brought in cargoes of cottons which they introduced to the Dutch. The English first discovered Indian cottons when Sir Francis Drake captured a Portuguese carack. The first English East India company was chartered in 1599 and the French company in 1664. The French saw these colorful textiles first at the Fair at St. Germain in 1658 where they caused a tremendous stir. These light and airy fabrics, with colorful designs in embroidery, in-

(*Continued on page 46*)

How Many Ends to the Inch?

by BERTA FREY

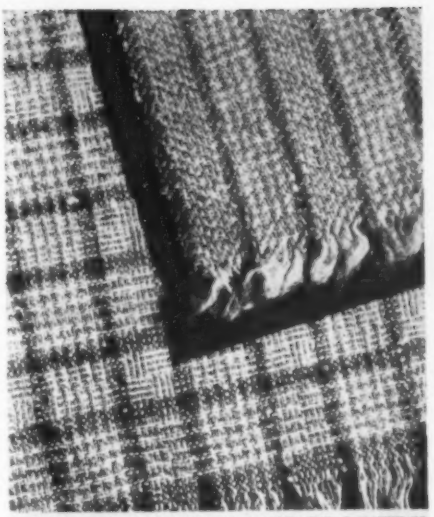
Some day, when I am old and have time to sit in a chair and rock, I hope I'll have time to do a lot of the things I want to do now, but somheow never find the time to do. And one of those things is to conduct a survey of weavers on the subject "What question are you most frequently asked?" And I'll wager that high on the list will be: "How do you know how many ends to put to the inch?" I know that I am asked that as frequently as almost anything else.

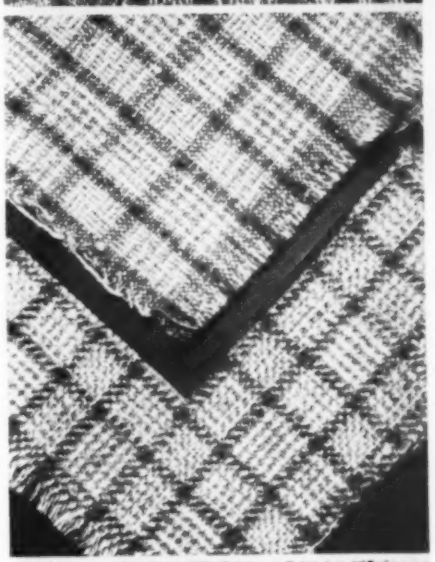
For many years I've been trying to find the proper answer, and I still think that the best answer is "experience." But it takes so long to gather experience, that I'm trying to plan a short cut for our New York Weavers Guild for the fall program. Perhaps some other guilds would like to try a similar program.

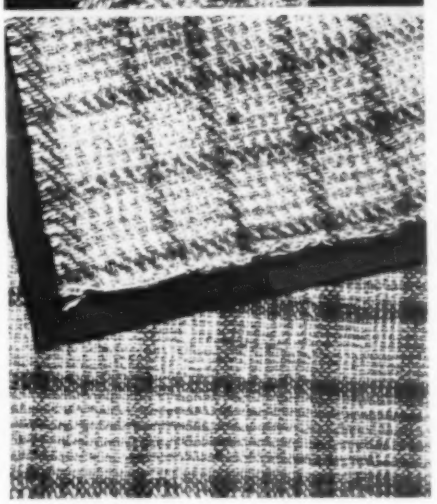
Personal taste makes a great difference. And the use for which the fabric is intended makes a great difference also. So far as I am personally concerned, for a Lace Bronson table cloth, I like to use 40/2 linen at 24 ends per inch. I saw a very beautiful table cloth made by Mrs. Geneve Shields of Los Angeles and she had used 30 ends per inch. We were discussing the problem of sley and she told me that a weaver of great skill and renown had made the remark: "But I thought that 40/2 linen should always be set at 36 per inch." And so it goes. One of my favorite themes is: "There is no ONE way to do anything." Each article that we make is a new problem and deserves its own consideration. And each individual's own personal feelings are a part of the problem.

Of course, there are certain fundamentals that we can know and can use as a sort of yardstick in planning a new fabric. And that is where our guild project is going to be of value to us all—we hope.

There probably will be 25 members taking part in this project. It will be planned so that each member will set up her loom for one piece of fabric, and when she has finished it, she will cut it in 25 samples. Then we will exchange samples, so that each of us will have 25 different samples. Each sample will show a more or less standard size yarn woven in tabby and in simple twill.







We will use 40/2 linen, sleyed at 24 per inch, at 30 and at 36 per inch. The samples probably will be three inches wide; 2½ inches woven in tabby and 2½ inches woven in twill. We will use 20/2 linen the same way, and possibly 10/2 or 12/2. We will make similar samples of Nos. 3, 5, 10, and 20 pearl cotton. We will use tweed yarns and worsted yarns in the same way. Carpet warp samples will be sleyed all the way from 12 to 20 ends per inch.

When we have this "album" of samples for ready reference, we can refer to it to see how linen (for instance) at 24 per inch is different from linen at 30 per inch. We can see how the same yarn is closer woven and stiffer when woven in tabby than in twill. Of course, we can't have every kind of yarn in our collection, but with a representative collection we can compare other yarns with the known kinds and have something on which to base a start. And of course we always "make a sample."

And a word here about samples. So often we make a small sample and then when it is just what we like, we put it on the big loom—only to find that it does not work out the same way at all. Just remember, a narrow piece will pack much tighter in the weft than the same yarn will pack in a wide piece.

Novelty yarns always present a problem of their own and it is very difficult to make any sort of guide for them—and certainly no rules can be made. As a rule, if I think I should use a boucle type of yarn at 12 ends per inch, I try it first at 10. Novelties usually require a more open sley than we can believe is right!

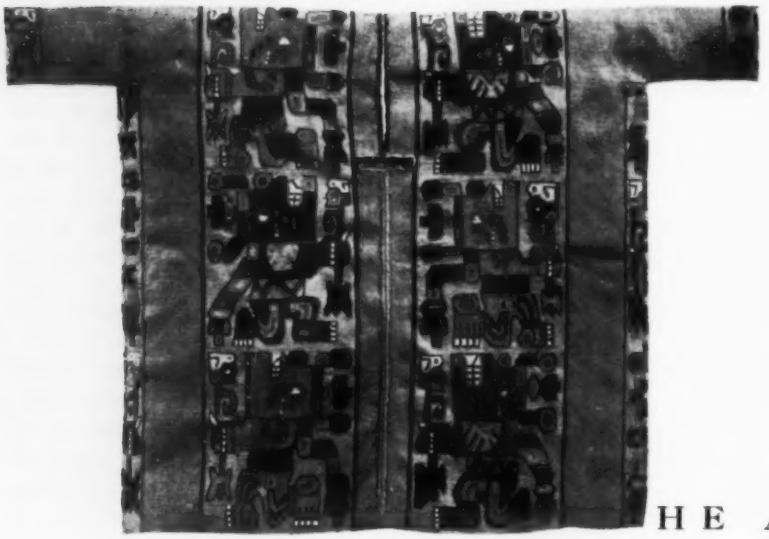
For so many years, American handweavers have used a 15-dent or a 12-dent reed. This is a hangover from the days when we used only carpet warp or 20/2 cotton for the warp and everything we made looked like a

(*Continued on page 52*)

Top—right, 20 ends to inch, twill (right) and tabby (left). Both weave square but twill square is not shown. Twill fabric is softer than tabby. Middle—24 ends to inch, tabby (top) weaves rectangular, and twill, (below) weaves square. If beaten to 24 ends per inch for weft, fabric would have been too stiff to use. Bottom—16 ends to inch, twill (top) packs rectangular instead of square and is almost sleazy, tabby weaves square. Material needs careful finishing. Woven by Berta Frey from Woodpecker and Tweed wool yarns in tan and brown shades distributed by Royal Society.

The Pre-Incan Weavers of Peru

by LILI BLUMENAU



THE ART OF TEXTILES IN EARLY PERUVIAN CULTURES STILL HOLDS INTEREST FOR MODERNS.

This miniature shirt, probably unique, is an outstanding example of early coastal Tiahuanacon weaving, which may be either a doll's shirt, or have some ceremonial significance. The two front panels show composite figures of running men with puma heads and condor feathers, in bright colors on yellow ground. Undecorated sections of the shirt are tan. Warp brown cotton, weft wool, probably vicuna with alpaca. Lent by Mr. and Mrs. A. B. Martin through the Brooklyn Museum for the exhibition "2000 Years of Tapestry Weaving" sponsored by the Wadsworth Athenaeum, Hartford, Connecticut, and the Baltimore, Md., Museum of Art.

Not depending on outside influence, the early Peruvian Indians wove textiles which equal and almost surpass the products of other, better known, civilizations. With their unique capacity for art they recorded life, morals and religious customs in clay, stone, metal, and woven materials. The design and material quality in these objects never fail to stimulate weavers, potters, and painters.

Today weavers find in the pre-Incan textiles inspiring craftsmanship, unity, and purpose—a purity of design that is never lost regardless of the fertile and exciting variety of the techniques used. Using primitive spindles and looms the Indians made yarn and textile variations of incomparable value in history and as studies for present day work. Other civilizations specialized in one or two structures, but the Indian weavers of Peru worked in tapestry, brocade, double cloth, gauze, and many more, producing all during the same era.

By 1200—three centuries before the discovery of America — Peruvian civilization had reached a degree of perfection comparable to the high periods in Egyptian culture, which it somewhat resembles. The dead were wrapped in layers of beautiful cloth, and utensils, created and used during life, were put into the graves. These vessels often were decorated with representations of human, animal, and geometric figures. Some were painted with figures in costume and shown wearing elaborate headdresses. On other vessels there are decorations portraying weavers and looms. Work baskets with tools and yarn are also found in the graves. Spindles of beautiful design, covered with cotton or wool, have been found, as well as weaving sticks and swords. These artifacts are of strong design and made of good material. And in the dry sand of the coastal desert cemeteries they were well preserved.

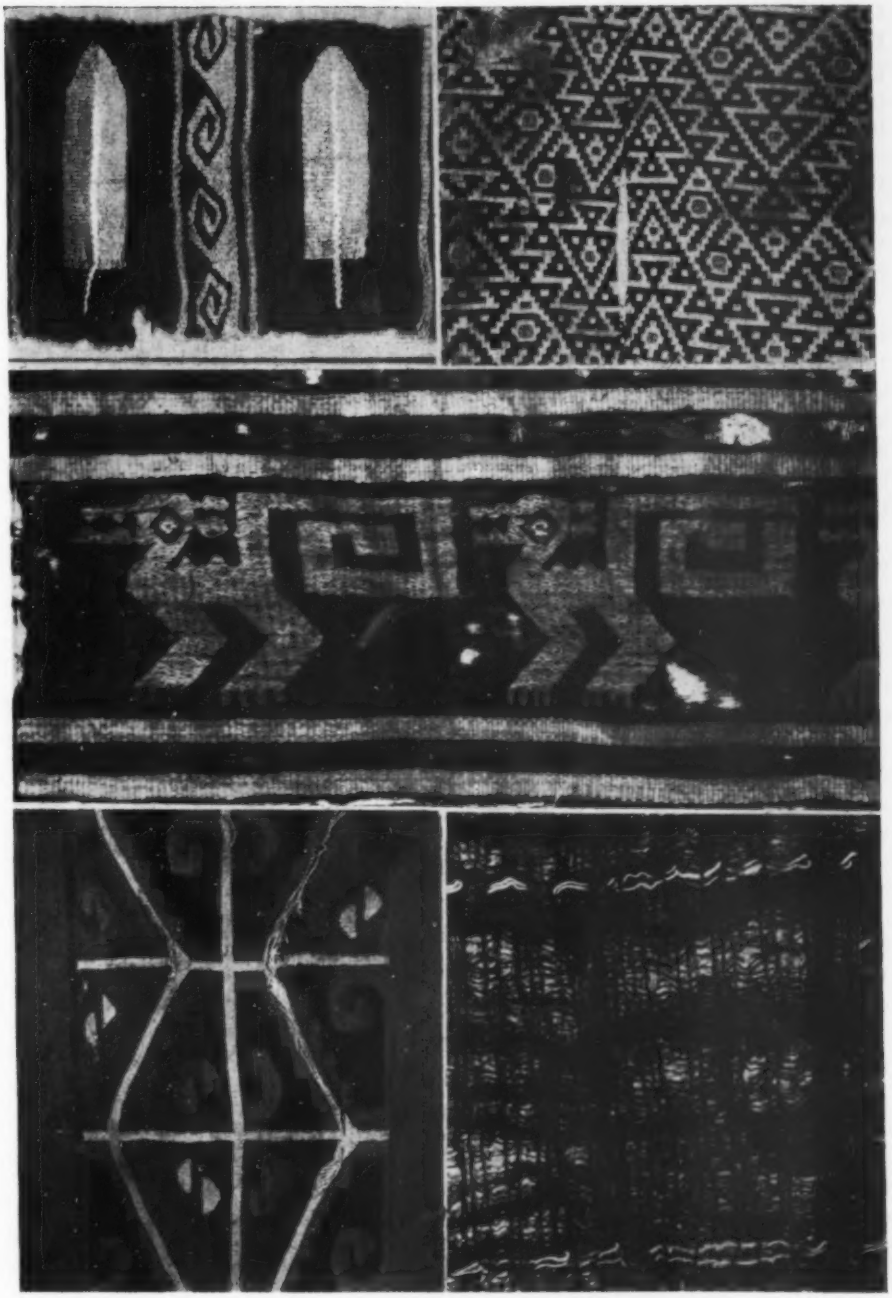
Peruvian work basket containing weaving implements.

Dating of Peruvian objects and textiles is tentative. Recent excavations have produced woven materials which are believed to be two thousand years old. Since the Indians had no writing knowledge, traditions were communicated by word of mouth, from one generation to another. It was only when the Spaniards came to Peru, in 1530, that Indian ideas were first put into writing. Archaeologists, in their study of superimpositions, layers, and refuse during excavation, have added to our understanding of the life of early Indians.

Old and magnificent textiles have been found in graves along the southern coast of Peru. These products of the Nasca culture are dated fifth century. Embroidered wrappings of another group, the Paracas, may be earlier. Mantles woven by natives of the Paracas peninsula are, in regard to decoration and size, unique in the history of weaving. Also on Peru's northern coast archaic Chimu textiles have been found, but are less well preserved because of the wetness of the climate. However, Chimu pottery gives evidence of weaving practice during the early period. Figures in tunics and mantles, as well as weavers at looms, appear on Chimu vessels.

The Nasca and Chimu coastal Indians flourished for several centuries, at the same time as the development of Indian culture and weaving in the mountain country. Exchange of raw material between highland and coast resulted in the development of a middle period or style. Products of this second period (700-1200) are called Tiahuanaco—architecture, pottery, and textiles which have been thought similar to modern or present day creations. The Andean Tiahuanaco textiles exhibit talent and culture in weaving knowledge and were based on religious interest and feeling. In 1250-1532, when the Incas came to power, this developed Andean style continued. Textiles woven at this time were technically perfect and possessed strong feeling for color. But in this late, or third, period sensibility, or refinement and mysticism, is less evident in the weavers' expressions.

The primitive floating loom was used by these ancient weavers as it is today in Mexico and Guatemala. Essential parts in this loom are the two rods which hold the warp in place. The end rods have a cord secured along their length. This cord, running along the rod, is fastened to the rod by another cord wound in spiral. The spiraled and transverse cords are similar to a modern loom's stick and apron connection. Warping the two cord-wound end rods together proceeds as follows:



Top—Left, tapestry, wool and cotton, feather and wave motif in white and shades of ochre, and rose. Tuca period, about 1300 *A.D., Peruvian tapestry wool about* 12*th or* 14*th centuries; right, cotton and wool double cloth, tan and brown, late Chimu,* 1000-1450 *A.D. Middle—Cotton, plain weave, brocaded, tan and brown, late Chimu,* 1000-1450 *A.D. Lower left—Cotton and wool tapestry, Tiahuanaco style, shades of red, tan, and brown,* 1000-1200 *A.D.; right, creped cotton, dark blue, tans, and white, all probably undyed, blue thought to be a native variety,* 1000 *to* 1200 *A.D. Top left, shown in "*2000 *Years of Tapestry Weaving." Photographs from The Cooper Union Museum for the Arts of Decoration, New York City.*

The warping yarn is estimated according to length and width of fabric desired. The yarn is secured around an end of one of the rods. It is alternated over and under the cord along the rod, the width of the proposed fabric, forming a warping cross, as on contemporary warping frames. The

two rods are thus warped together and the width and length of the warp, together with the end rods, make a complete loom. A strong belt of tape is fixed to each end, one to go round the weaver's waist, the opposite belt to be hitched over a hook, post, or other device. The weaver draws the loom tautly, slanting it downward toward his body, tensing the warp.

A pair of string heddle rods is used to lift odd and even warp threads on this primitive loom. The pre-Incan shuttle was thin and long. Often the weaver used newly spun yarn off the spindle instead of using a shuttle. Intricate and subtle weaves were obtained with simple instruments.

The fibers used were cotton, from the Peruvian coast, and mountain wool. The cotton and wool were in shades of white to reddish brown. Vicuna, alpaca, and llama fibers were used. The alpaca wool added additional colors, bluish gray and black. These natural colors, used in combinations with reds and blues in expert, brilliant dyes, made beautiful contrasts. The Peruvian weavers also used other raw materials. Maguey, a hemp type of bast fiber derived from cactus stalk, had been employed by the Indians in pre-weaving times. Peruvian fabrics were also decorated with shells and feathers. Sometimes small, disk-like threaded shells were woven into the cloth. Feather-woven fabrics, however, were the height of style in Peruvian taste.

Weave variations were abundant, ranging from plain weave and brocade to most intricate gauze. Peruvian tapestry is even more complex than Flemish and French. Twill and rib variations were created, as well as masterly double and triple cloth. The techniques are an endless inspiration. There is much feeling for material and composition, particularly in embroidered cloth. The Paracas fabric structure of varied stitches in relation to open plain weave is an example. Fringes and tassels are tied in the most elegant way, in some, and there are many fabrics with versatile knitted borders. The Peruvians also invented a pile weave. Ordinary pile weave consists of warp and weft with rows of knots alternating with picks in plain weave; or the pile is effected with a second warp. But the Peruvians created a mesh ground especially well suited to holding knots.

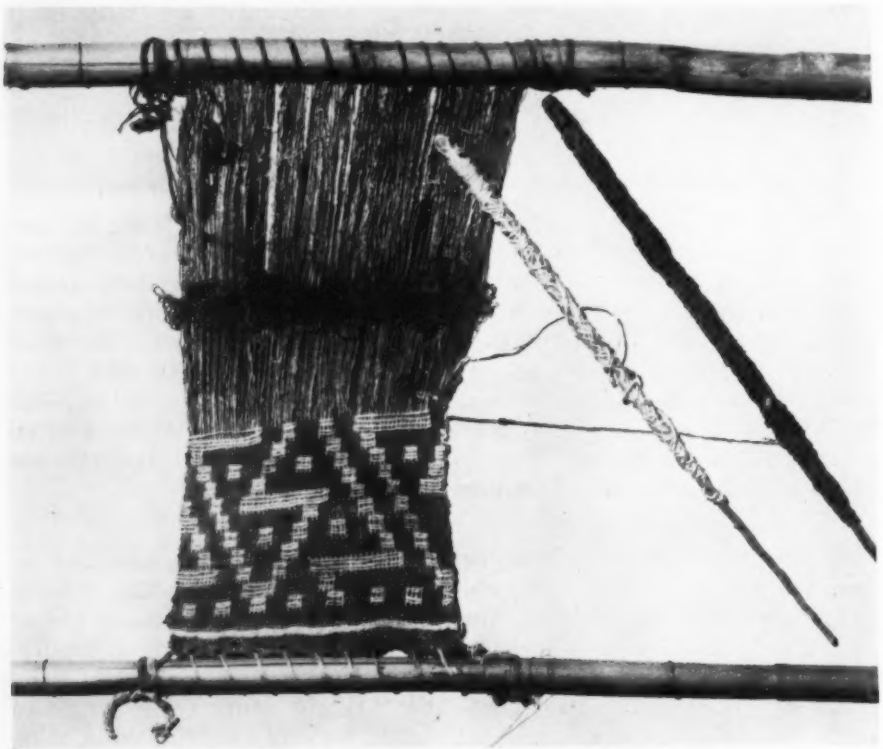
In use of ornament and color treatment, the pre-Incan weavers have much to teach about designing, even though we do not use yarn and color to interpret figures as they did. Today's weaver gains more by studying the expressive techniques or skills evidenced in Peruvian textiles than by mechanically copying or trying to reproduce the charm of their motifs—demon gods, rows of llamas, and the like. Art in weaving depends on how one transforms a pattern, whether it is a twill weave or a fish motif.

Ornament in the early Tiahuanaco period was devoid of naturalism. Symbolic motifs were arranged in patterns. Eyes and human heads were transformed into geometrics and these motifs were distributed in various sizes and directions. Backgrounds are sometimes divided in large and small bands. The narrow strips have no decoration, but the principal ones are divided in rectangles. Abstract motifs of human figures, in allover pattern, are contained in these squares. The power of Tiahuanaco and other Indian textiles lies not only in the Peruvian talent for inventing shapes and arrangements, but also in the deft use of values. Variations of dark and light are often drastic but, through volume and placement of color and design, unity is created. Red, blue, and yellow appear in various intensities with neutrals. Typical color schemes consist of three reds and four neutrals. In these combinations the hues are pink, bright rose, and purplish red with light tan, ochre yellow, light and dark brown.

On late Chimu textiles bird and fish motifs are severely formalized in geometrics. A tan and brown double cloth design consists of large-size zigzags, with the bands forming birds and the points comprising a fish motif. Here there is no difference between background and motif—both are treated with emphasis. Another early Chimu example is bordered with large birds, their tails in meander or Greek key design. These are brocaded in light tan or dark brown plain weave.

The pre-Incans, like weavers and customers today, had considerable taste for sheer material. In a blue crepe cloth with vertical and horizontal stripes we can admire a warp and weft arrangement similar to some of ours. Stripe and plaid patterns in the Peruvian work are neither stripes nor plaids. The secret may lie in quantity, in these plaid and stripe designs: varying amounts of thread in varying closed and open spaces may produce the effect.

It is profitable to study examples of early Peruvian weaving at close hand in museums. There is no other source material so closely related to contemporary creative weaving. The product of the pre-Incan weavers can inspire as well as help solve problems in contemporary design and method.



Double cloth on loom, brown and white, Peru.

Design for a ONE TREADLE LOOM

by GEORGE E. PARISEAU, M.D.

A one treadle loom has many advantages over other looms, especially multiple harness looms. The harnesses to be raised are selected by keys which are as easy to manipulate as typewriter keys. Simply depress the keys corresponding to the harnesses to be raised and then press the treadle.

In weaving with this loom, there are no complicated tie-ups. With the usual treadle loom, making the tie-ups to the treadles is a back breaking job and much adjusting is required to have all the harnesses rise to the proper height in order to obtain a perfect shed. Anyone who has used a multiple harness loom can realize the amount of labor required in changing a tie-up from a double weave to the various damask, lace, or summer and winter weaves.

With this loom, the shed is always perfect and no adjustments are ever necessary. With an 8-harness loom of this type there are 254 possible combinations of the harnesses in contrast to the 12 or 14 available even on large treadle looms. If the loom is threaded with an 8-harness summer and winter or Bronson lace weave, there are 63 possible combinations of the six blocks which can be made, thus giving unlimited possibilties of design. The mechanism can be used for any number of harnesses but the accompanying diagrams are for 8-harnesses.

The principle of this loom is the use of cams to raise the harnesses, one cam being used for each harness. The cams are mounted on a shaft on which they turn freely. There is a slot running the entire length of the shaft. Metal pins are pushed into the slot when the keys are depressed and then when the shaft is turned by the treadle all the cams which have been selected by the keys will rise and will elevate the corresponding harnesses. There is a mechanical device which acts by releasing the hooks attached to the bell cranks. The bell cranks then fall back into place and when the treadle is released the cams return to their original position, the metal pins will fall out of the slot and the keys will rise to their upper position. The mechanism is then ready for the next shuttle shot.

In order for the harnesses to rise to the proper height so as to obtain a perfect shed, the cams must be made of different lengths as the second to eighth harnesses must rise higher than the first harness. The difference in the length of each successive cam is about one-fourth inch.

The most difficult part of the construction is drilling the holes in the cams for the metal pins. This must be done very accurately, otherwise the pins will not slip into the slot easily.

The cams, shaft, and bell cranks can be made of well-seasoned maple one inch thick. As purchased from the lumber yard and dressed on both sides this wood is about 7/8 of an inch thick. The wires from the bell cranks to the triangular plates and from these plates to the keys should be straight and stiff. The best material for this purpose is the bus bar which was formerly used for making radios and which can be purchased from radio supply stores in 20-inch lengths.

Only the mechanism will be considered here. It can be assembled in a box and fitted into a loom already made or an entire loom can be constructed around it. The harnesses slide up and down in grooved vertical uprights. It is best to attach angle irons at each corner of the harnesses as shown in the diagram. The harnesses are not attached in any manner and can be lifted out completely when putting on a warp.

Heavy sheet brass or aluminum should be used for the triangular plates to which the wires are attached. The wire connections are easily made. First drill the three holes in each plate. These holes should be slightly larger than the bus bar so that it moves freely. Take a piece of wire of the proper length to reach from the plate to the bell crank. Make a right angle bend about three-sixteenths of an inch long at one end. Slip the triangular plate on the bend and then peen the end of the wire so that it will not slip out. The end of the wire to be attached to the bell crank can be flattened with a hammer to increase its width and to allow a hole to be drilled for the screw attaching it to the bell crank.

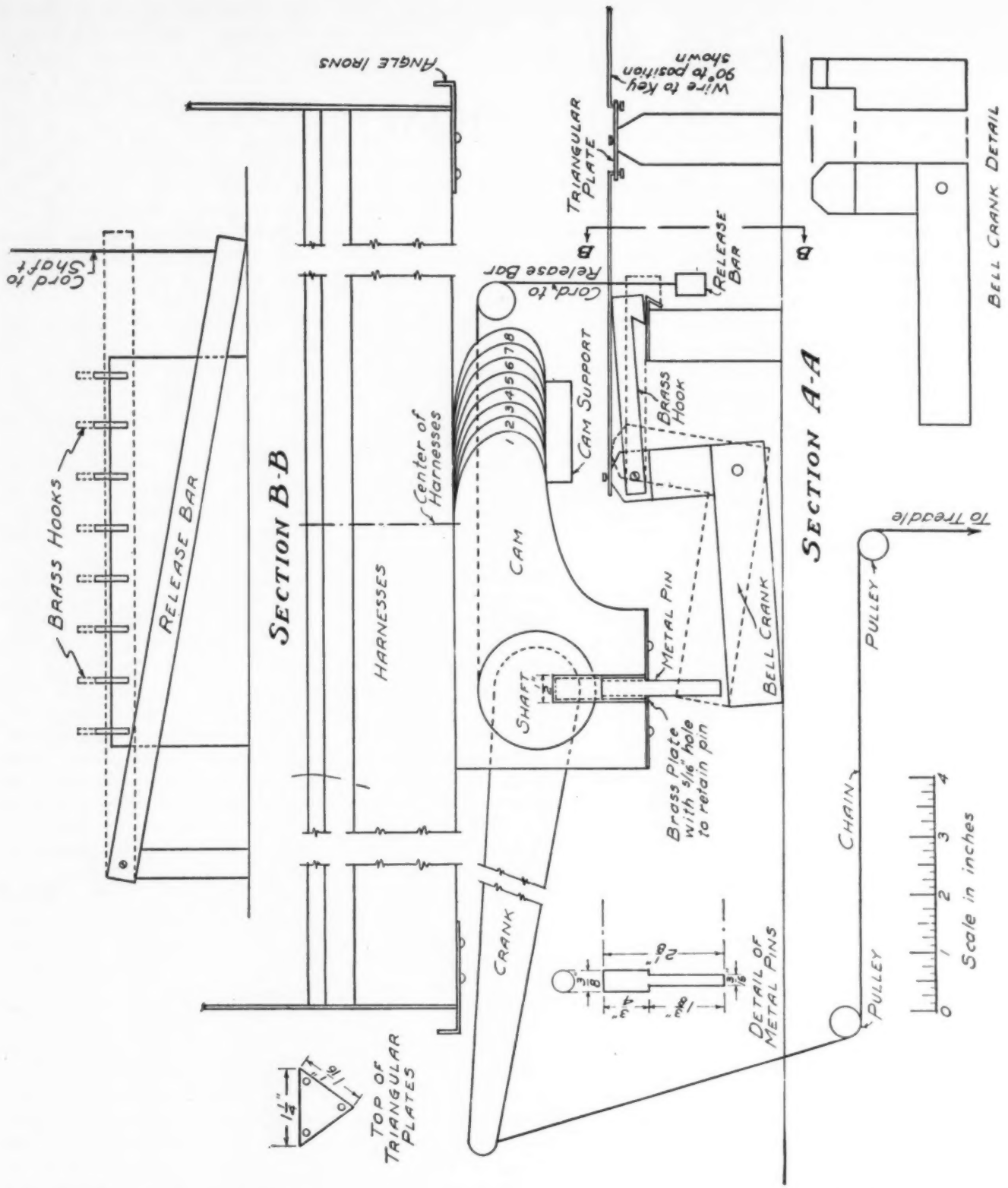
A crank should be attached to the slotted shaft at its distal end. It should be as long as possible to increase the leverage. The crank is connected with the treadle by means of a strong chain passing over pulleys.

The keys can be mounted under the breast beam at the front of the loom. To do this, the support for the triangular plates must be moved to the right at a position opposite to the keys. The wires from the bell cranks to the triangular plates will then need to be longer than is shown in the diagram and also the wires from the plates to the keys. The wires to the keys must pass under the cloth beam so as not to interfere with the woven fabric. It may be necessary to raise the cloth beam on some looms. If the keys do not rise freely after the treadle has been released it may be necessary to increase the weight of the long arm of the bell cranks by attaching a piece of strap iron.

A long coil spring should be attached to the end of the crank so that the shaft will return to its original position when the treadle is released. A screen door spring is sufficient. Some sort of a buffer or stop will need to be placed on the shaft or crank so that the shaft will be stopped with the slot down.

A small screw eye should be placed at the distal end of each key to receive the wires. The end of each wire should be threaded with a 4/36 die, and two 4/36 nuts separated by a lock washer should be placed on each wire on each side of the screw eye. These nuts are used for adjustment so that all the keys will be level at their upper and lower positions.

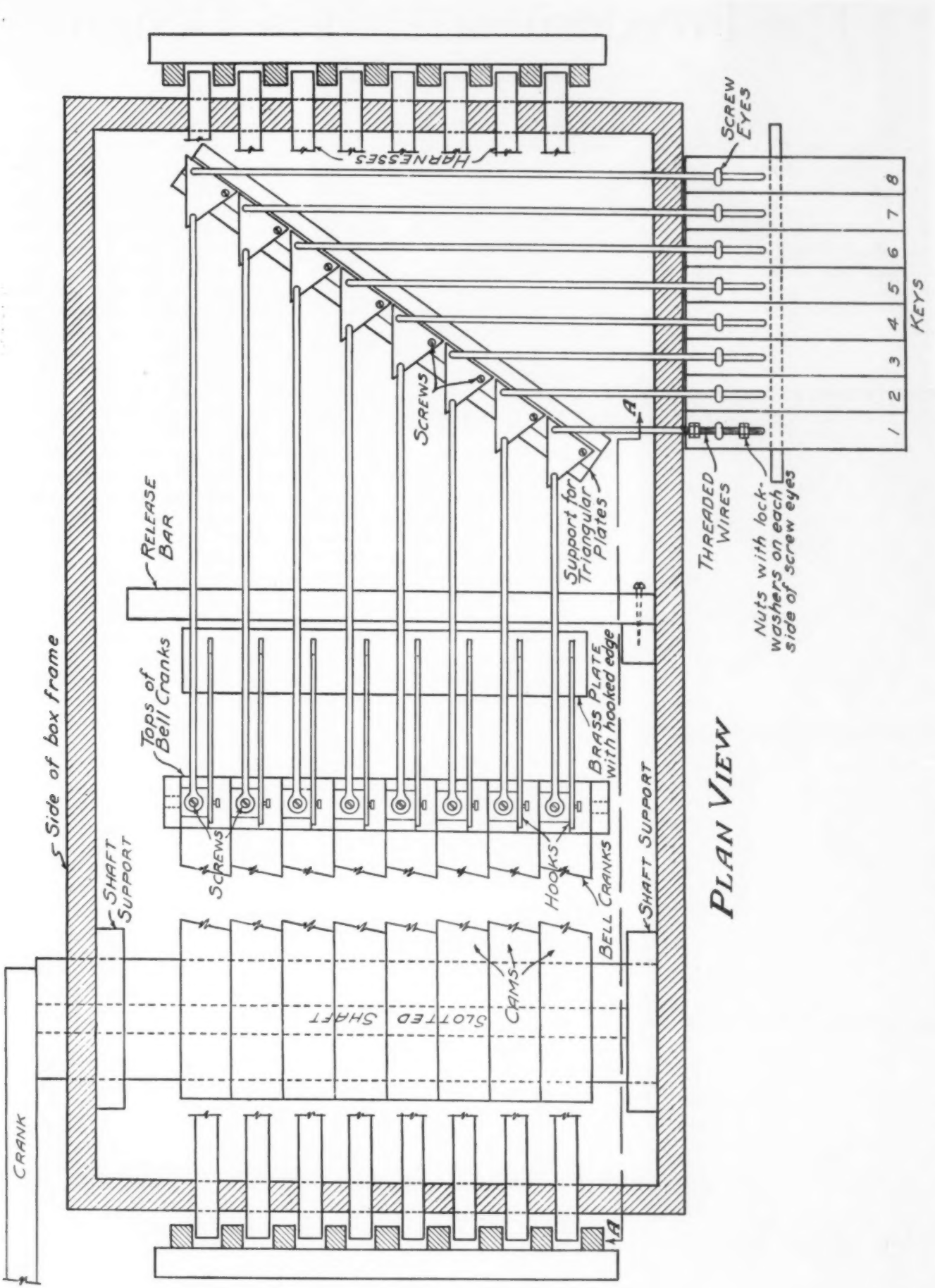
The hook shaped piece of brass on which the hooks from the bell cranks engage can be made of two pieces of brass soldered at the proper angle and then screwed to the support.



A number of power tools are necessary such as a circular saw, drill press, and band or jig saw. A circle cutter for making the large circular holes in the cams and in the supports for the shaft would be of great value. A metal lathe is needed for shaping the metal pins. All these tools are usually available at any manual training school or at night wood working classes. All the parts can be made in one or two evenings.

This method of construction may not be the best possible one and undoubtedly many improvements could be made but it is very simple and works perfectly.

In the new book "Adventures in Weaving" by Gertrude G. Greer and in the reprint of Oelsner and Dale's "Handbook of Weaves" recently issued, there are many 8-harness patterns. For one who desires to try out these and other 8-harness patterns or who wishes to experiment with variations in treadling, a one-treadle loom of this description would save the labor of making the different tie-ups required.


HARNESSES
SCREW EYES
KEYS
1
2
3
4
5
6
7
8
SCREWS
A
RELEASE BAR
SUPPORT FOR TRIANGULAR PLATES
THREADED WIRES
NUTS WITH LOCK-WASHERS ON EACH SIDE OF SCREW EYES
TOPS OF BELL CRANKS
BRASS PLATE WITH HOOKED EDGE
SIDE OF BOX FRAME
SHAFT SUPPORT
SCREWS
HOOKS
BELL CRANKS
SHAFT SUPPORT
SLOTTED SHAFT
CAMS
CRANK
A

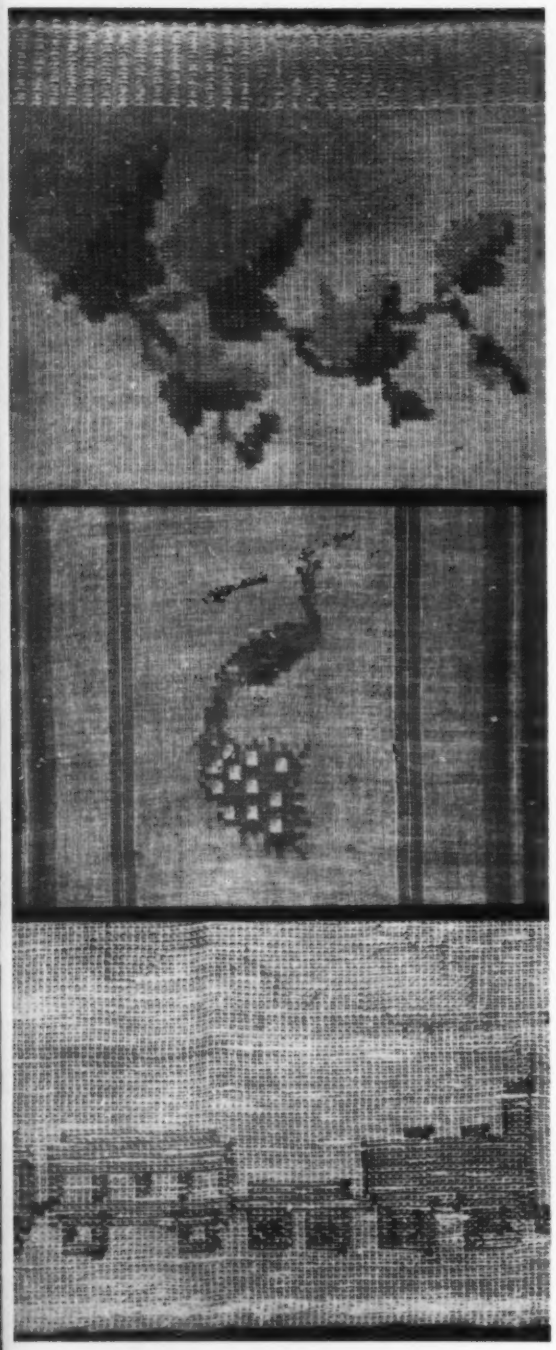
PLAN VIEW

The Freedom of Laid-in Design

by EVELYN NEHER

There are many kinds of laid-in weaves. No matter what kind we know, however, when we speak of "laid-in" it becomes instantly clear to us that besides the warp and weft in this fabric there will be an extra something, "the laid-in," which means a design put in with extra weft threads. Laid-in weave is one of the finger controlled weaves, and is often referred to as finger weaving.

One of the fascinations of this technique is the broad scope and great freedom in the kind of design which may be used by the designer-weaver. It may be a geometric design taken from an old textile or adapted from a crochet pattern or other source. It may be a conventionalized leaf or flower design, or it may be a life-like or fantastic design of your own choosing which you can work out in an orderly plan on cross-section (graph) paper. This method offers all kinds of freedom in the use of color, according to the inspiration of the weaver. It seems wise to work out the design completely on graph paper before commencing to weave.



Laid-in designs by Mrs. Neher. From the top down. Mat woven according to Miss Minor's special technique. Peacock, in blues and purples on natural, laid-in on tabby, from the underside of the warp. Laid-in from the front. Method used for mat for child's supper tray.

It is the "freedom of expression" that I will emphasize here. I am not considering the commercial angle at all for I am not sure there is any market, considering the time involved in relation to present prices for weaving, for laid-in weave. I do know, however, that laid-in has a definite value for the individual craftsman. For the weaver who feels the strong urge to weave something that is not successfully reproduced on factory looms, yet does not require the time nor skill for weaving tapestry, laid-in weave will prove most satisfactory.

Laid-in weaving is suitable for use in wall hangings, upholstery, pillow covers, and drapery. Laid-in decorations give beauty, interest and added color to small gifts such as table mats, bags, purses, needle-cases, sachets, and bookmarks.

Perhaps the simplest method is the laid-in from the front, on tabby, which can be woven either on a 2-shed loom or on a multiple harness loom using only the plain weave sheds. The cover for the child's supper tray, which I call "The Little Train that Could," is an example of this. Designs such as these are amusing to make and delight children who use them. The design "grows" rapidly, and right on the top of the web where it can be seen as the work progresses. This technique adapts itself nicely to the choice of several thread combinations. A linen warp and weft binder with a linen boucle pattern weft, done all in one color, has proved a successful combination, although it could be quite charming if done in several dye lots of one color. For variety, try wool, cotton, silk or linen in different combinations. The most important considerations are the comparative weights, the beat, and the proportions of the design as it weaves up. Watch for these points. It gives interest to use a shiny weft design on dull background threads as clearly seen in the mat that is now before me as I write. The design and texture are so subtle that it seems impossible to catch its delicacy in a photograph, so I will give a short description of it here. At the side of the mat is a multi-colored iris of soft, old silk on a natural handspun linen background with a border on four sides of gold silk. In this case the technique, as well as the color and the thread texture, helps to form the design.

Another and equally simple method, is laid-in on tabby, this time working from the wrong side (that is, the top of the web will be the under-side of the finished article). The effect of this weave is somewhat shadowy as there is no definite outline to the design. Thread texture and techniques determine the end result for this method. An example of this technique is the peacock design, in bright colors against a natural ground.

The next technique I will mention here is Miss Edna V. Minor's specialty, and has become my favorite and choice of all. I learned this method from her at the Craft Students League in New York. It is shown in the small ivy mat and the treatment is somewhat different from the other examples. The design is laid-in on tabby just as the others, but the background weft is put in on two of the pattern harness combinations, and the border is put in on still another

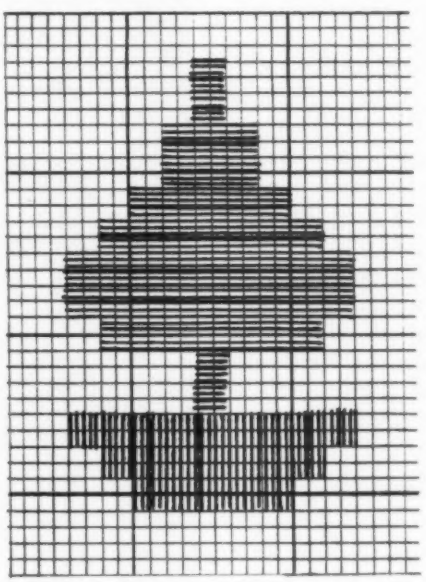
Student at work on laid-in design at Summer Arts and Crafts Workshop, Willimantic State Teachers College, Connecticut, where Mrs. Neher is director of weaving. Lace weaves are shown at the lower edge of fabric.

pattern harness combination. One needs a 4-harness loom and threaded to one of the simple threadings. By using a much heavier border thread, and a finer-than-warp weft binder, and a design weft thread the same-weight-as-warp, the results are especially effective for use on a table or tray where the color and polish of the wood shows up its sheer background texture.

Perhaps you have wanted to start a project in laid-in, but have hesitated because it is a new technique to you. Perhaps it has seemed difficult and time consuming so you have not wanted to start a large project. This can be understood, but easily overcome by starting with a small plan. Take the smallest loom you have available and give yourself a few pleasant hours, well spent, weaving a bit of laid-in.

As a sample project, let us consider weaving a bookmark. A bookmark should be thin and sheer so it will not injure the book in which it is to be used, so let us use 20/2 natural cotton for warp, set at 30 ends to the inch, 60 threads wide will give 2″ in the reed and 1⅞″ finished if a single linen is used for the tabby weft. For the design thread I much prefer the really old silk embroidery threads, but I realize these are not available to everyone in this day, so two strands of the mercerized 6-strand floss may be used satisfactorily, and it comes in a nice range of color. If a 4-harness loom is available, thread it to some simple little overshot or twill variation. One is given here that has proven useful. If this is woven with the tabby and the weft pattern is put in with color in the following order: 1-2, 2-3, 3-4, 1-4 harness combinations for the first border, and in reverse for the last border, little colored scallops are the result.

The loom is warped and threaded, tied-down and a few strands of filler have been put in to draw the warp threads in an even order, so let us

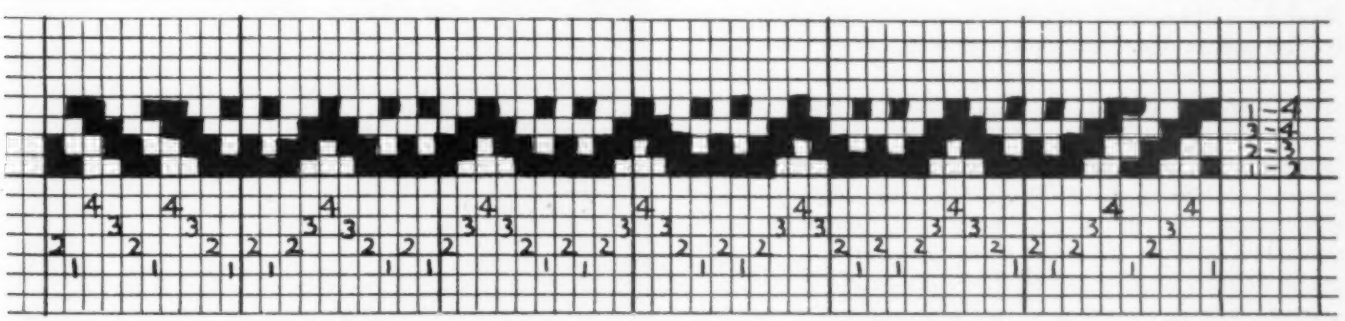


Christmas tree bookmark.

put in the next shed a tongue depressor, (the small flat stick that doctors use). This flat stick makes a nice gauge for the length of the first fringe. Weave in tabby with the singles linen in white or a neutral color, six shots firmly beaten; then make the scallop in color as described above, or if you are using a 2-harness loom make one, three, or five weft stripes in color, as the first border. Weave about 2½″ in tabby, lightly beaten. At this time the fringe stick can be removed and over the first six tabby rows a hemstitching may be worked right now to make a neat and permanent finish so there will be no fraying. This bookmark will measure about 4¾″ plus the fringe on each end when complete.

We are now ready to start the first row of the design. Each square of the graph paper will be equal to four warp threads and four weft shots. I have chosen to weave a green tree in a red tub, which takes nine squares in width, and as there are 30 threads in the warp of the open tabby shed, there will be six threads on each side

(*Continued on page* 58)



Pattern for a bookmark, woven in tabby on a 4-harness loom.

Designs for Today

from Great-grandmother's Drafts

by MARGARET RISWOLD

The discovery of a tiny roll of yellowed strips of paper, tied with a bit of aged, handwoven cotton ribbon, developed into one of the most unusual experiments ever undertaken by weaving students at the University of California at Los Angeles.

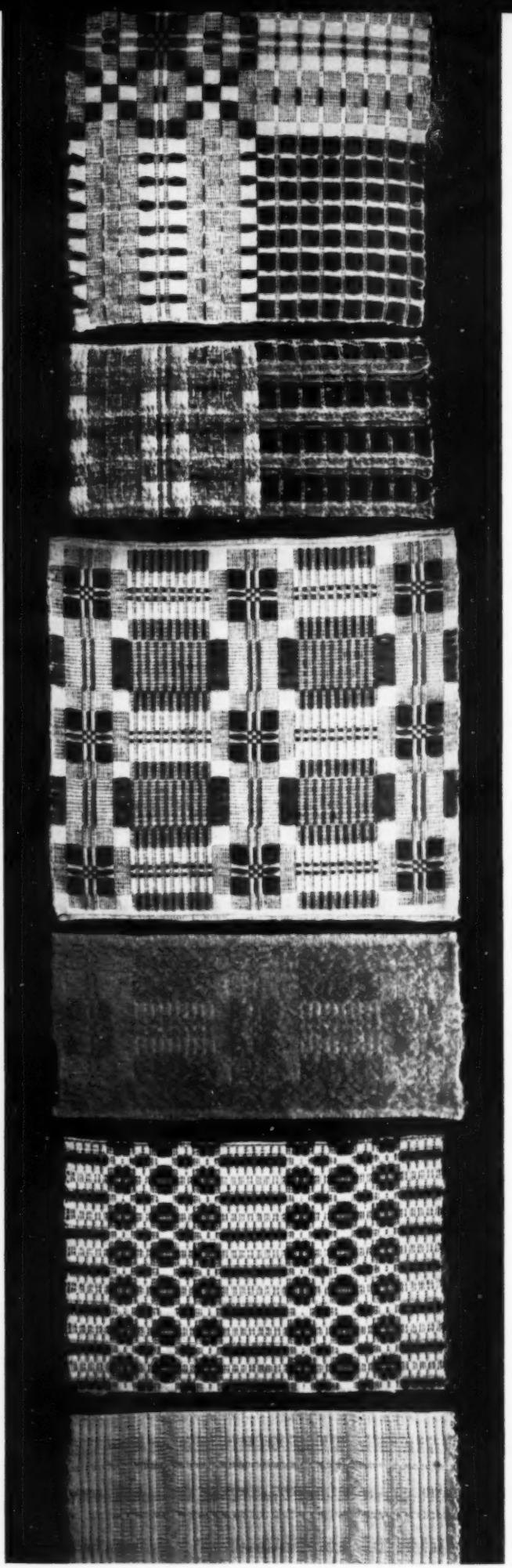
It was an experiment that presented a variety of problems, beginning with the deciphering of drafts as they were written more than a 100 years ago and ending with their contemporary interpretation. To the students it was a rewarding experience, enriching their knowledge and appreciation of the past while adding to their realization that fabrics woven today should be according to today's thinking and today's uses, no matter what draft is used.

The papers came down from my great-grandmother and were found by my father among his mother's possessions, following her death some years ago. The bits of paper escaped the incinerator because my father had a sentimental attachment to the tiny roll: he had seen it among his mother's private papers since he was a boy, but had never known its significance, other than it had belonged to his grandmother.

Recently upon examining the tender fragments of paper, to my surprise, I found that they were weaving drafts—some dated 1833 and 1839! A few had names: "Collet's Fancy," "Queen's Fancy," "Carriage Wheels," "Compass and Double Squares," and "Diamond Huckerback." Others were undated and unnamed—just drafts written on narrow strips of white paper, one made longer by sewing two bits together with a linen thread (there was no scotch tape in those days).

The drafts were all written in the short method, but in several different ways—vertical lines separated blocks in some and were omitted in others; numerals were used to indicate the repeats in each block in some while short vertical marks were used in others. Some were written in a way I've never seen reproduced in weaving books —in three long vertical rows of numerals.

Because I was interested in the designs of the cover-



Designs from original 19th century drafts on opposite page and modern interpretations, in pairs, original at top. Reading down, contemporary version of "Colette's Fancy", woven with black textured rayon and black looped mohair bands alternating with bands of 2/16 chartreuse wool and cocoa brown wool boucle' by Zelda Rachman. "Queen's Fancy", in the contemporary interpretation, was woven with powder blue single-ply rayon in the tabby treadling and rose pink looped mohair that has a binding thread of glistening salmon pink which gives a nice sparkle. By Betsy Haldeman. This unnamed draft was developed by Eleanor Horn who used 2/20 dull green-yellow cotton in the tabby treadling and 2/14 dark natural linen in the overshot with an occasional shot of golden brown heather-mix wool for modern version.

lets my great-grandmother had once woven and because I felt my students would learn much from interpreting and weaving the drafts, I asked several of the advanced students to work them out.

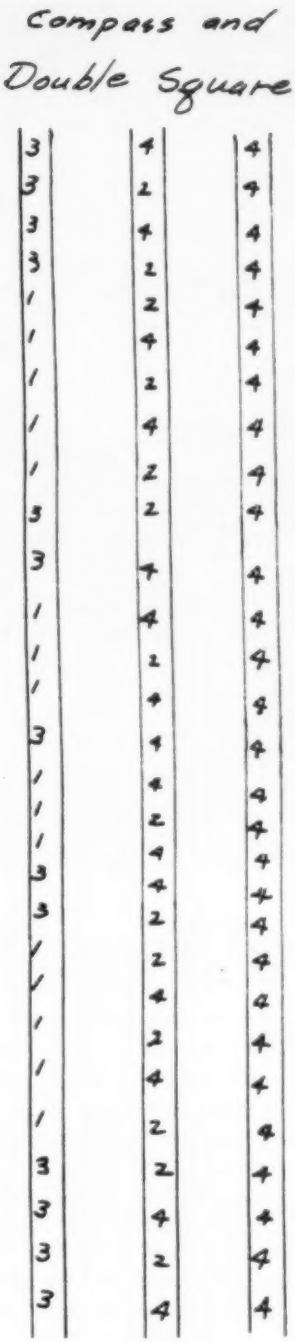
Each student working on one of the drafts began the experiment by deciphering the short draft and extending it to the long draft on graph paper. He then drew it down to get some idea of what the design would be before setting up the loom. Some research was done to determine what yarns were typical of the period from 1800 to 1850 and also what colors other than blue were used.

Then each student attempted to duplicate, as nearly as possible, the colonial pieces of that period, working from the assigned draft. Unbleached white cotton yarn was used to warp the looms and the first sample was woven in the typical blue for the pattern treadling. The next step was to weave a sample using a combination of two or three colors—gold, rust, navy, turkey red or others that appeared typically colonial in combination—according to the research material.

Their final step was to experiment with contemporary interpretations of the drafts, still using the white warp, but employing contemporary yarn combinations and color combinations in the weft and their own original treadlings. Working competely independently, they made as many samples as possible, employing fibers of their own choosing to produce textural effects that express contemporary thinking. Their choice of materials was varied, including novelty and single ply rayons, looped mohair, plain and boucle wool, cottons and/or linens in combinations of black, chartreuse, and cocoa brown for one piece, various tints of pink for another and golden-brown heathermix with dull yellow-green and dark natural for a third.

The results were most interesting in that the sharp contrasts associated with colonial weavers were softened by the blending of colors and yarn finishes.

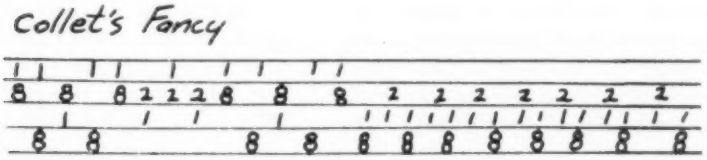
Some of the students felt that these drafts gave them more scope, creatively, than our shorter and more commonly known drafts. They liked the resulting blocks of various surfaces with contrast in texture. The entire group found the experiment rewarding and had a much greater respect for colonial fabrics than they had had before starting the project, though they still felt that contemporary expression, whatever draft is used, is more compatible with contemporary living.

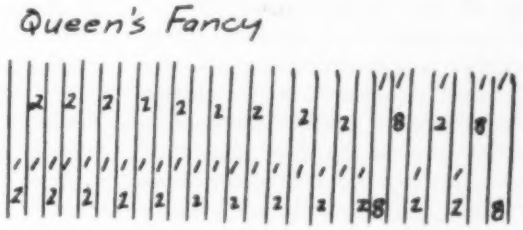


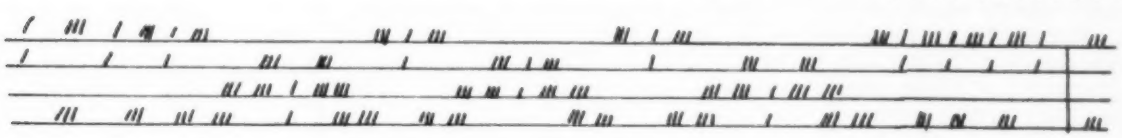
19th century drafts, as originally written. Middle, unknown, bottom, "Carriage Wheels."

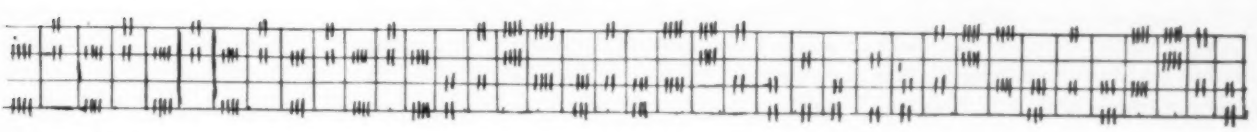
The draft of "Compass and Double Square," given here, evidently is the treadling draft. From it Miss Berta Frey of New York developed the interpretation in the diagram shown on page 52. The original evidently was a very special pattern, Miss Frey said, and her interpretation has a number of unanswered questions in it. If the draft as given is the treadling draft, as one would naturally suppose, the threading draft must have been quite different; in other words, the pattern probably was not one of the "tromp as writ" variety. There are 29 fours in

(*Continued on page* 54)









Zapotecan Indian woman of Yalalag, Oaxaca, Mexico, weaving.

A Mexican Travelogue

by T. H. HEWITT

So much attention has been paid to handweaving in Guatemala by weavers in the United States that the craft in neighboring Mexico has been unfortunately neglected. Although the country is now in the midst of a huge program of economic and industrial expansion paralleling earlier developments in the United States, Mexico was for centuries a country where handcraft was predominant and the crafts are important and interesting today. Moreover, greater attention is being devoted to the development of handcraft, both by the government and others interested than for many years because political conditions are more stable now in Mexico than they have been for almost 50 years. During the long period of revolution following the end of the Diaz regime little attention could be given to any consistent development in either handcraft or industry.

Visitors to Mexico often complain that they cannot find any "native" crafts and that everything is produced for the tourist trade. This is a complaint, more or less valid, in every country where handcraft has been important and where now tourists are more plentful than in the past. It is also true of certain areas where handcraft is produced in the United States. However, Mexico is a large country, much of it off the beaten track of the tourist, and it isn't difficult to find remote villages where the handcrafts exist in almost their primitive form.

Anyone interested in Mexican handcraft must look at it against its historical background. Great civilizations existed in Mexico before the Spanish conquest, each building upon the foundation of the one which preceded it. The Spanish conquerors, although they were greatly amazed at the Aztec civilization which they destroyed, nevertheless had no other thought in mind than to wipe out the native culture and create a new Spain in the western hemisphere. Spanish ideas influenced by the European Renaissance predominated in the development of art, architecture, and handcraft in Mexico for more than three centuries. Spanish designs however, were executed by Indian craftsmen and the resulting product until the present time has reflected the impact of the Indian influence on the conquerors.

The history of Mexico has been turbulent; the country has been attacked and occupied by Spain, France and the United States, not to mention the internal revolutions and conflicts. Because Mexico was under the rule of Spain from 1519 to 1813, the Spanish influence in all things was very great. It is a little staggering to know that the Spanish Viceroys founded San Nicolás College, in the charming city of Morelia, just 48 years after Columbus discovered America. There was a printing press operating in Mexico City in 1535, and the University of Mexico was established in 1553. Under the rule of the Viceroys many Indian crafts and talents were recognized and developed, but in predominantly Spanish style.

Vasco de Quiroga was sent by Charles V to help the natives in the Lake Patzcuaro region; in addition to developing the native crafts he taught them new ones and organized the villages into guilds. Other governors taught entire villages certain crafts for which the Indians were particularly suited, and, even today, most towns are principally occupied with that one particular craft. Taxco is a city of silverworkers, Coyotopec (Oaxaca) is a village of potters, and weavers dominate the puebla of Jocotopec. Pre-Spanish looms in Mexico were either horizontal frame type or the more primitive waist-band kind. The Spaniards introduced the upright loom, but it is rarely seen today in Mexico.

The somewhat fantastic Indian names of towns are apt to bewilder any visitor, but the pronunciation can be easily mastered. And, many villages in different parts of Mexico bear the same, or almost identical, names. Coyotopec, near Guadalajara, is a small weaving village; but Coyotopec, in the state of Oaxaca, is

Huichol Indian man of El Cuapinole, Nayarit, Mexico, weaving.

famous for its black unglazed pottery. Many a Mexico visitor has started out for San Miguel Regla and wound up at San Miguel Allende.

Tourist traffic to Mexico (and only part of it is from the United States) is increasing by leaps and bounds, and the tourist trade is becoming the second industry of the country. Many weavers will be among the visitors in future years, and, if they know where to go, they will see a lot of interesting weaving activity. The republic can be roughly divided into three zones of elevation: the lowlands (tierra caliente), the great central plateau (tierra templada) and the highlands (tierra fria). Some writers even add a fourth zone (tierra helada) where the mountains reach an elevation of 18,000 feet and more. It is logical that most all the weaving and craft work is done in villages and cities on the central plateau or in the highlands. For there the climate is cool, warm clothing is a necessity (although shoes don't seem to be), and the people are more industrious.

In the City of Mexico, many types of handweaving can be seen in the shops and markets. In the new Popular Arts Museum, the government has assembled the finest examples of craftwork from all parts of the republic, and there is a sales room where copies of most pieces can be bought. Outstanding among the handwoven articles in this new museum are the wool rebozos, which is an all-purpose scarf, overcoat, shopping bag and hat so typical of the Mexican woman's dress. Rebozos are usually 20 or 30 inches wide and 6 or 7 feet long, and always elaborately fringed. The wool rebozos are most always solid colored; the warp threads average 20 or 24 threads to the inch with the hand-spun weft yarn being woven in tabby. The market places, such as Lagunilla, La Merced, San Juan, offer many types of handweaving for sale. The small mats and rugs woven of brightly dyed, coarse sisal or grass are among the most interesting woven articles in the splendid shops on the Paseo de la Reforma and Avenida Juarez. The Casa Cervantes shop, on Avenida Juarez, sells the gay cotton table cloth sets, handwoven from hand-dyed threads; the weaving is done at the Cervantes shop in Oaxaca.

To the northeast of the capital, the visitor can see spinners along the Pan American Highway, near Ixmiquilpan. The Indians spin cotton and maguey fiber yarns on tiny whorls, not unlike tops, and they are very adept at spinning as they dodge the traffic on the carretera.

The villages near Texcoco are important for handweaving. The village of Chiconcuac is the weaving center for the Texcoco serapes. Serapes are the common rug and blanket, usually woven with heavy wool wefts on thin warps. Serapes can be any size, and those about 4 by 6 feet are worn as overcoats by Indian men; sometimes a slit is woven or cut in the center of the serape so that it is worn like the Argentine "poncho." The Aztec weavers of Chiconcuac make intricate and showy serapes of wool warps and wefts; the designs are geometric, and the colors are usually dark blue and white with splashes of color added to the diamond-shaped patterns. San Martin displays a lot of handweaving. Some of the serapes are brought from Santa Ana, in the state of Tlaxcala, and the work is generally poor in color planning.

Puebla is so famous for its Talavera tile that handweaving goes almost unnoticed in that beautiful city. There are interesting old Satillo serapes at the Museo José Luis Bello, and the hidden convent of Santa Monica has on display some amazing old handmade laces, vestments and gold embroideries. They are the work of nuns who lived there secretly from 1857 to 1935, when the convent was discovered and closed by the government.

The state of Oaxaca (pronounced WAH-HA-KA) is very rich in handcrafts. In the city of Oaxaca, the State Museum is one of the finest small museums to be seen anywhere. One large room is devoted to a collection of craftwork of that region, and the exhibition is both absorbing and extremely well displayed. Another gallery shows the fabulous treasures from tomb number 7 in the Monte Alban ruins. Here one can view the priceless jewelry, as well as beautifully carved objects in jade and quartz; they were made hundreds of years before the birth of Christ and remained hidden in the tomb until only 20 years ago. Casa Cervantes is the name of an unusual Oaxaca shop where men work at large fly-shuttle looms in the patio. The colorful cot-

Top: Detail of wool and cotton compound cloth belt, navy and natural. Mexico, 1st half 20th century. Middle: Detail of man's pocket belt, wool and cotton double cloth, bright red and white. Mexico, late 19th-early 20th century. Bottom: Detail of Huipil made by Amuzga Indians, cotton leino brocaded with wools, pink, orange, and red on natural. Mexico, Guerrero, 1st half 20th century.

ton table cloths and yardage they weave from hand-dyed yarn are for sale in the shop; also on display are many regional Mexican costumes and other handwoven pieces. The city is famous for some of its old buildings; among them, the church of Santo Domingo has been called the most beautiful church in the world. Also, the city market in Oaxaca is perhaps the most interesting in the country. Lolis and Miguel Castillo have a shop near the State Museum that features handwoven materials and rebozos; they call it "Los Castillo." Handwoven tablecloths, bedspreads, skirts, aprons and blouses may be seen at the handweaving studio of Guillermo Brena, Pino Suarez 58, in Oaxaca.

Guadalupita is a tiny village of handweavers, and Tenancingo is famous for its handwoven rebozos. The rebozo weavers in Tenancingo make thin rebozos of very fine thread. The patterns are achieved by using spot-dyed threads, dyed in the hank so that the dark and light make a visual texture when woven.

Two important craft villages are near Oaxaca. Teotitlán del Valle, a few miles southeast, is a village of handweavers. The last few miles of the road are in poor condition, and Teotitlán is difficult to visit, but most of the woven articles are sold in shops and by vendors around the portales in Oaxaca. The serapes from this village are woven of wool, handspun in white and dark grayed colors, in the geometric Mitla designs which one can see at the nearby Mitla ruins. South of Oaxaca, the Indians in Coyotopec make finely designed and worked black pottery. The potters here create amazing rounded shapes without the use of a wheel, and ceramists come from all over the world to observe the process. Near there, Santo Tomas is another village of handweavers. The town of Yalalag

(*Continued on page* 53)

Myrtis Copestick, with myrtlewood spinning wheel.

From Sheep to Skirt in Five Days

Marin County, California, Spinners and Weavers Act out a "Believe-It-Or-Not" Cartoon

by MYRTIS GORST COPESTICK

A Ripley "Believe-It-or-Not" cartoon was the inspiration for a most successful art-in-action program presented by the weavers of the Marin Society of Artists at the Marin Art and Garden Fair at Ross, California, last summer.

The cartoon illustrated a gentleman attired in the style of the late 1800's, with the caption "Sir Joshua Throckmorton, Newbery, England, sheared the wool from a sheep at 5:00 A.M. and wore it to dinner the same day at 6:20 P.M. as a purple hunting jacket. The feat won him a wager of $5,250.00."

I asked our members how many spinners there were in our group. The answer was "five." Then I suggested that we try to duplicate, with only five spinners, the Ripley stunt, as our art-in-action attraction for the 5-day Marin Art and Garden Fair. It had never been done, so far as we knew, at any show. It should have a spectacular power to draw attention to our group from the general public; it had publicity values; it was a project with "sustained effort" to cover the five days (a requisite as far as the art-in-action was concerned); and it would accent the important role of the weaver in the over-all process of making a garment.

My suggestion produced three separate reactions: (1) we couldn't do it in the time specified with only five spinners, unless we "fudged" in some way; (2) if we could do it, it would take such an extraordinary amount of work, that the weavers, a little tired from the Spring Festival, would not be able to spend five days at the show, let alone all the preliminary steps; (3) it would be spectacular, educational, colossal, stupendous—a drawing-card beyond anything we had ever done;—and from then on, one couldn't curb their enthusiasm

As it was my idea, they made me chairman of that part of the weavers' exhibit for the Marin Art and Garden Fair. A purple hunting jacket is not a currently popular item of attire, so the weavers chose a skirt and stole for the project, as having a more general appeal to an audience. This could also be given away at the end of the show to some lucky person and the names on the backs of the tickets for drawing the winning number would assure us of a good mailing list for future shows.

The first problem was to secure a sheep, which was docile enough to be shorn in public and could be kept on exhibition during the entire show. Securing a sheep which hadn't been shorn that late in the season proved to be the most difficult obstacle. My advice to anyone planning to produce a similar attraction, is to determine first at what time of year most flocks are shorn in their locality, and then plan the show for that time of year. Although we located one off-season lamb, with a 6-month fleece, she was a temperamental creature, and later developed a bad case of fox-tails so had to be shorn to be treated properly.

We canvassed San Francisco's Golden Gate Park, where a flock of beautiful, clean, heavy-fleeced sheep graze under ideal conditions. The cool ocean breezes from the Pacific keep the park cool enough so that the sheep there are not shorn until quite late, about July. We found however, that the sheep were not allowed to be taken from the Park except in emergency. I even called on Mayor Elmer E. Robinson of San Francisco for permission to borrow one of the park sheep, but he was able to give me little or no encouragement.

It looked as if our project would have to be done without a sheep-shearing act, with our spinners using, less dramatically, a fleece purchased from a local wool warehouse. Finally, however, we found four unshorn sheep belong to a 4-H Club member, Kenny Kamp, 13-year old stockman of Kentfield, which had recently been on exhibition where one ram lamb won a blue ribbon. Kenny wanted his sheep shorn, but if we took one, we had to shear the other three as well.

This proved to be a real bonanza, because we were able to shear one sheep ten days before the Fair, and

Kenny Kamp, 13-year-old 4-H Club member of Kentfield, loaned his sheep to the weavers' committee.

make exhaustive time-studies, several dye-tests, and other checks on our project, which served as a much needed rehearsal for the main event. We learned that we could not use wool from other sheep to augment our original supply, as the wool from different breeds of sheep, of different environments, take varying amounts of dye. We wanted a deep green for the main color of the skirt and stole, and any substitution of other wool showed up in the dye-tests as an entirely different color. We could not have "cheated" if we had wanted to.

Because we were too busy spinning, dyeing, and weaving, during the show, to keep as accurate time records as we wished, the results on spinning time given here are taken from our rehearsal studies.

With the absence of Lee Bate and one other spinner, I had to teach two other weavers how to spin in the month before the Fair. Frances Shinn and daughter Norma (age 13) learned to spin an excellent thread by the time the show opened.

Our line-up for the 5-day Marin Art and Garden Fair was as follows: spinners—Mama Gravander, Jessica Giffen, Frances and Norma Shinn, and Myrtis Copestick; weaver—Edith Schneider; dye-mistress—Jessica Giffen; master of ceremonies—Jerry Rubin; seamstress—Kamma Zethraus; designers—Kamma Zethraus, Jan Rubin, and Mama Gravander.

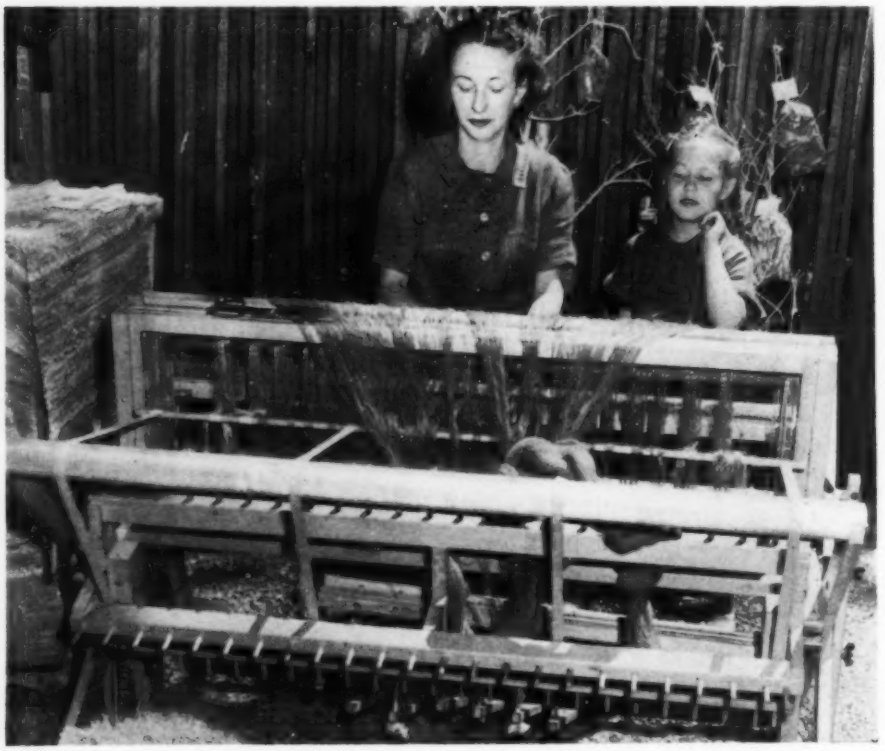
All our other weavers provided the enthusiastic sales force, food-vendors, and hostesses, under the guidance of our chairman, Fern Davies. Mama Gravander's daughter, Kiki, and granddaughter, Jimi, with Clara Mae Frier and others assisted with the carding.

Sheep-shearing was done by "Rusty" Hyde, with equipment loaned by the California Wool Growers Association, and transportation to and from the fair was provided for Kenny's sheep by Frank Bate Motors of San Francisco in a station wagon.

Rusty sheared the largest of the three remaining sheep at 10:30 A.M. Wednesday, July 4, then sheared the two lambs on Saturday and Sunday afternoons. During the show there was one sheep or lamb on exhibition each day, and it is hard to tell which attracted the most attention—our busy spinning wheels or the "Baaa-a-a-ah!" of the sheep, frequently interrupting or accenting Jerry Rubin's announcements over the microphone. Certainly the sheep had more appeal to the children, but our exhibit was crowded constantly by people interested enough to ask hundreds of questions about our quaint process of making a garment, from sheep to skirt, by hand.

By Thursday evening, July 5, we had approximately 3 pounds of washed yarn, which represented about 72 hours of carding and spinning. This was the net result from 6 pounds of raw wool, a loss of 50 per cent. Jessica Giffen dyed this yarn on Friday, producing a background color of forest green for the main portion of the skirt and stole, with other skeins dyed rust, gold, yellow, and chartreuse for the accent bands and the belt of the skirt.

Edith Schneider wove the material in eight hours on Saturday, and Kamma Zethraus cut, sewed, and pressed the finished skirt and stole in two hours on Sunday. Pat Lewis modeled our creation and the applause from the audience let us know that others agreed with our own pleased satisfaction of a job well-done; a smart-looking ensemble of lovely soft material in harmonious colors. Possibly the nicest compliment came from Morrison Stewart, photographer for the California



Edith Schneider sets up the loom, with daughter Barbara an interested spectator. Mother and daughter are wearing matching turquoise linen dresses, material for which was woven by Mrs. Schneider at the Spring Festival.

Wool Growers Association, who had been waiting patiently for the finale. When Pat stepped onto the platform under the trees by the gallery, Mr. Stewart grabbed his camera and said, "This was worth waiting for!"

The material was amazingly soft. The texture delighted the weavers to such an extent that we had to draw lots for the remaining yarns. No one would permit so much as a thread to be sold outside our own group, as each weaver had plans as to what he or she could do with such material. Another surprise was that after five days of hard work, the weavers were still eager and enthusiastic. There was no let-down. The left-over wool had to be divided also among those

After the wool was carded in the grease, spun, and washed, Mrs. Jessica Giffen dyed the skeins of yarn in shades of green, gold, yellow, rust and chartreuse.

who spin and those who wanted to learn.

The dirndl skirt and stole were woven in plain tabby with colors inserted as follows:

1. Plain tabby, three shots of each color, separated by 3 shots plain tabby, dark green, between colors.

2. Same order of 4 colors, separated by plain tabby, dark green, but these bands consisted of an overshot every two inches. After weaving, the overshot threads were cut, leaving a tufted result, or more of a broken line. At a distance, and in the photograph, this gives the appearance of

Kamma Zethraus finishes the skirt, while Norma Shinn, 13-year old spinner and weaver watches.

a definite pattern.

3. Above repeated three times, then slightly wider bands of the colors in plain tabby.

At the top, two threads of heavy cotton, one-fourth inch apart, were woven in the pattern shed to make a shirring at the waist. This eliminates the need for gathering by hand or any other sewing. For a skirt of this kind, the warp could be set from 12 to 18 to the inch, depending upon the type and weight of yarn.

A fine fleece was given to us by the E. H. Tryon Company of San Francisco, and we used this for exhibition spinning after sufficient material had been made for the skirt and stole from the wool from Kenny Kamp's animals. Kenny's sheep were the Suffolk breed, with very soft, but short fiber wool. Possibly our time record could have been improved if we had been able to obtain sheep noted for their wool-bearing characteristics, but the season of the year was not in our favor, and we considered ourselves lucky that Kenny's sheep were available.

A special kind of appreciation and admiration is owing to Mama Gravander. In addition to manning her own exhibit of a Swedish kitchen and garden, she spun constantly for the full five days—a remarkable inspiration to all of us.

We won the art-in-action first prize, and sales of our woven articles added financial success to our achievement of creating an artistic piece of apparel.

We learned a great deal (at least I know I did!) and if we ever attempt to repeat our performance, we will make a few changes, and then we might surpass the record made by Mr. Ripley's Sir Joshua Throckmorton. For instance, with time to plan, we would start with a large sheep, preferably selected for us by a representative of the California Wool Growers Association, for the quality of fiber. With time to gather a census of spinners in the Bay Area, and a method of getting 72 spinners to card and spin for one hour, on a pre-arranged date, at the pre-arranged place and with the use of a modern automatic laundry machine to wash,

Pat Lewis models the finished skirt and stole, material dark green with accent bands of gold, chartreuse, yellow and rust.

dye, and dry the yarn, with the speedy weavers and seamstresses we have in our group, I think we could make Mr. Ripley proud of us! The record we have to surpass is 13 hours and 20 minutes. Mr. Douglas Ripley gave us an enlarged copy of the original cartoon to display with our exhibit, and after the show, wrote to find out if we had made a record. Mr. Ripley doesn't know it, but he is subtly urging us to better the original project.

Tools You Can Make

Bits and Pieces Will Provide Material

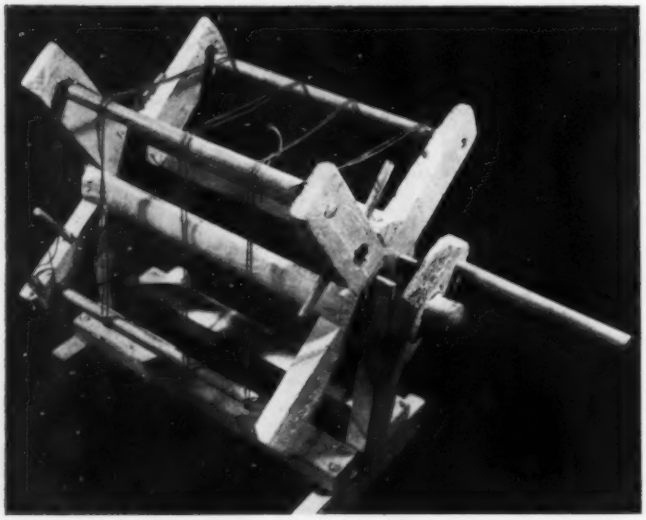


Figure 2.

When Mrs. R. T. Solensten of Crestwood, New York, volunteered as an instructor of weaving in the occupational therapy department of one of the large New York City hospitals during World War II, the first problem which confronted her was a shortage of equipment. Since more, rather than less, weaving was needed and since equipment would not be forthcoming through pre-war channels, she decided not only that something would have to be done, but that she probably would have to do it.

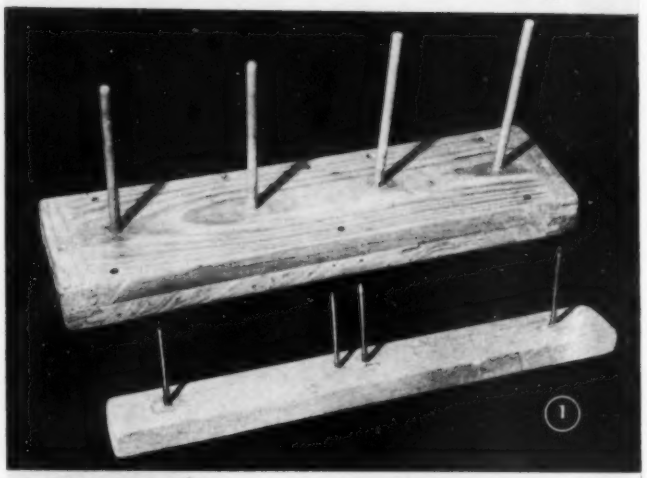
An experienced weaver with an interest in, and knowledge of the tools needed for effective work, she set her mind on the problem of improvising equipment from material which was available. First of all she needed wood. Since many handweaver's tools and gadgets can be made from scrap wood, such material would have to do, although it is not as convenient to use as pieces cut to size and prepared in the shop. As grocery stores still had wooden boxes and crates which would provide pieces of various widths and thicknesses, she started with that source. Plant labels, tongue depressors, dowels, old wooden rods from towel racks, and rungs from old broken chairs proved useful for her projects.

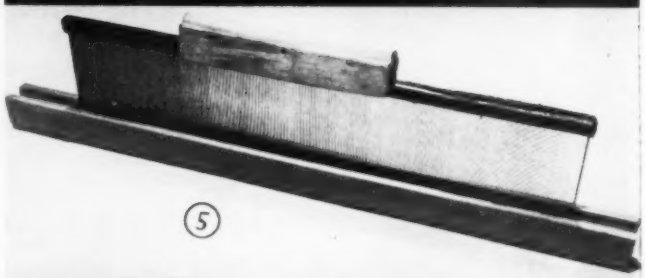
All the equipment illustrated here Mrs. Solensten made from scrap wood with the help only of a saw, a drill, a discarded ice pick, and an old brace and bit. The wood was given a smooth finish by sanding with carpenter's sandpaper, waxing, and then polishing thoroughly. Careful finishing is most important for homemade tools. Not only must they be well sandpapered and waxed in order to perform well, but the "feel" of the tool is most important to the patient. The hand waxing gives an unusually pleasant "feel." Much of this equipment could be made in occupational woodworking shops from scraps left over from other projects. Waxing and polishing could be done by some bed patients.

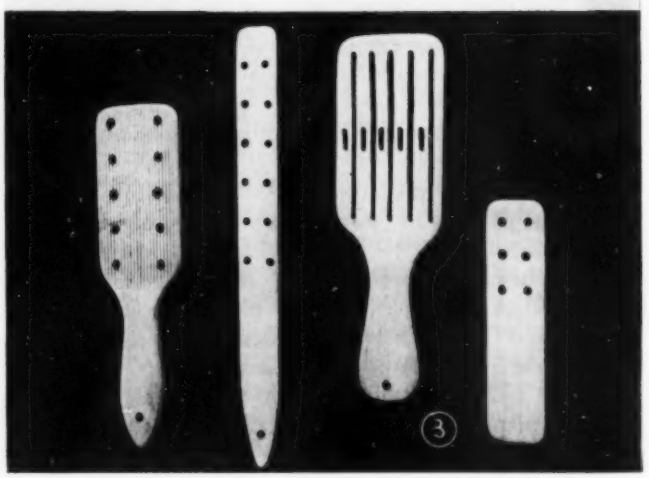
Figure 1, at right, shows a flat spool-holder made from two ends of a shallow wooden box; for example, a tomato box, the ends of which are nailed or screwed together and which have dowels fitted and fastened securely into holes that have been drilled through the two boards. The dowels may be spaced so as to accommodate small spools or large cones of yarn or thread.

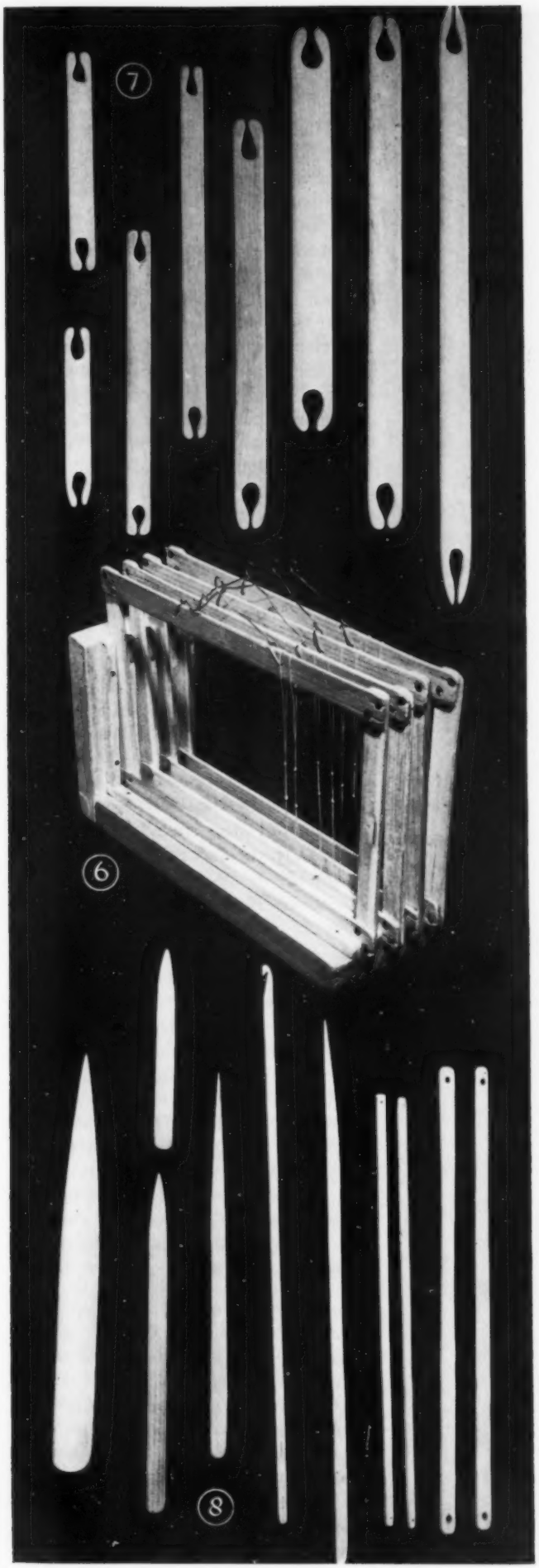
Below is shown a simple device for making string heddles, just nails set at the required distance and driven through a board.

A table warping mill (Figure 2) can be made from an empty rope reel, obtained from a hardware store, and set in a simple stand. Dowels or lattice strips are fastened









between the ends of the cross pieces at both ends of the reel. Small dowels to hold ends of the warp and the "cross" are fastened in the end cross pieces. A part of an old broom stick serves as an axle. Fastened to one end of this axle is a dowel large enough to serve as a handle, by means of which the "mill" is turned. Warps in sections of 25 to 50 threads each, and 5 to 8 yards long, can thus be made. The "mill" can be used by a non-ambulatory patient to great advantage, since the action in winding the warp has considerable orthopedic value.

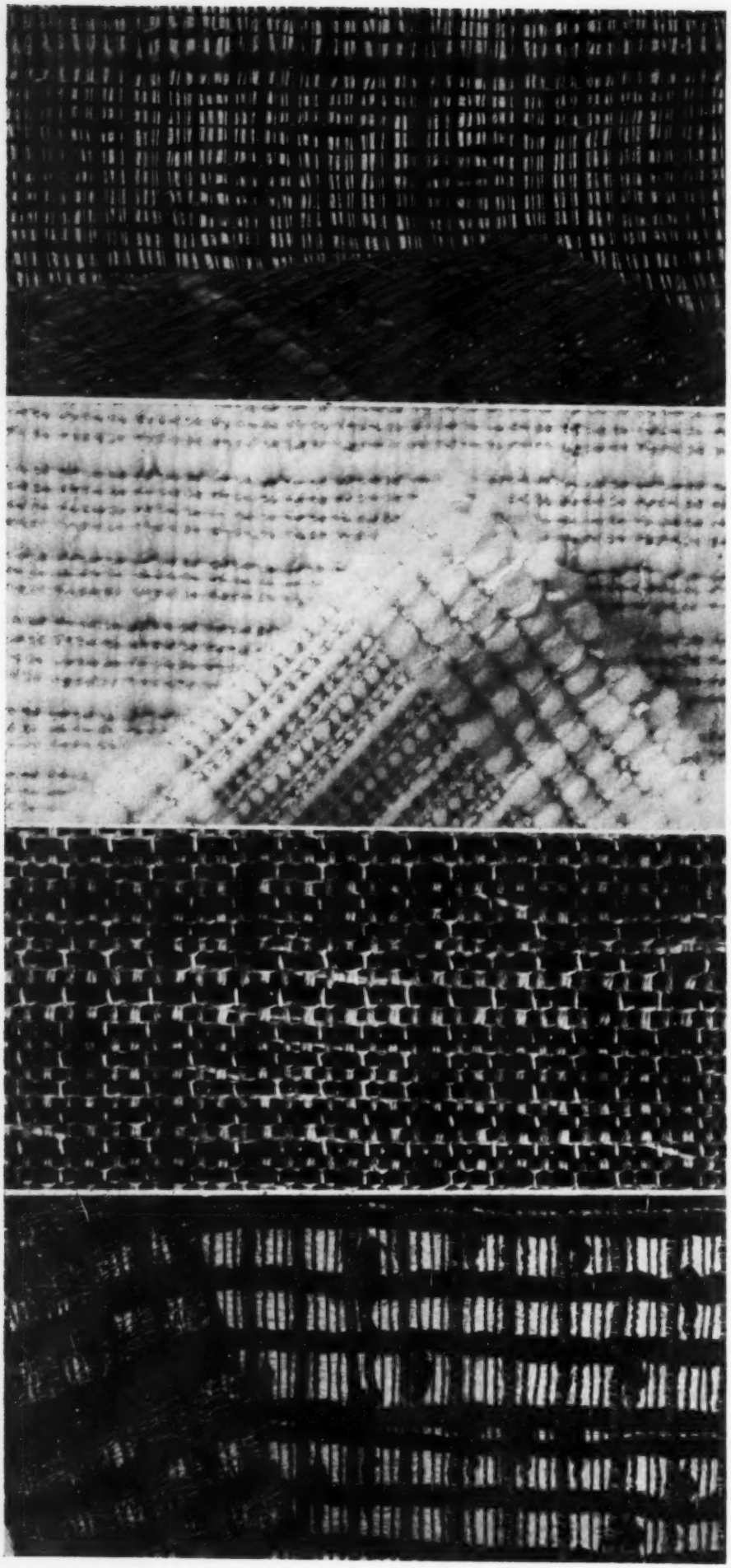
Figures 3, 7, 8, show useful accessories which may be made from small pieces of wood, such as plant labels, lattice strips or old butter paddles. These include warping paddles, different types and sizes of shuttles, pick-up and crochet hooks, which are used for laid-in and lace techniques. Wooden plant labels are convenient for these tools. Lease sticks to fit any size of loom may also be made from narrow strips of wood. Making this equipment is often more satisfactory than buying it, because sizes especially suited to the patient's needs can be produced. Mrs. Solensten heats an old ice pick in a gas flame to burn holes in the warping paddles.

Figure 4 shows different types of supports for a reed, which will hold it in place in a position away from the beater. By using these devices a bed patient can pull warp ends through the dents before threading them through the heddles in the harness frames. On top is a small "reed extender," described later.

One type of support used for holding the reed is made of two pieces of wood, 1¼" or 1½" square and 5" long. Drill a hole through each, large enough to accommodate the lower edge of the reed. From the top of the block to the hole, saw an opening wide enough for the steel wires of the reed to slip through. Small rubber pins on the bottom of these supports will prevent them from slipping while the patient is at work. Instead of the blocks, a "C" clamp can be attached at each end of the reed and at right angles to it. Placed flat on the table, these clamps will also hold the reed in an upright position, thus enabling the patient to enter the warp ends through it. Only one clamp is shown in the photograph, to show position.

If you need a wider reed than is available, a narrow one may be made to serve by placing a strip of wood designed to fit over the top of the read and into the depression in the top bar of the beater, so as to hold the reed firmly in the beater. This "reed extender" may be made the full length of the reed or just long enough to hold the reed firmly in place. The long "extender" shown in Figure 5 was made at a mill, but it would not be beyond the reach of a good home carpenter. This photograph shows the long reed "extender" at the bottom and, at the top, a section of a simple one, easily made at home or in the woodworking shop. Use a strip of wood about ½" thick, ¾" wide and as long as desired. Shape one edge by planing slightly and sanding, so it is rounded to fit the depression in the horizontal bar of the beater. On each side of this piece, nail a thin strip of wood far enough up from the rounded edge to allow it to fit into the depression in the beater. This "extender" is placed over the top edge of the reed and then fitted in place in the beater. By using such an expedient, reeds

(*Continued on page 49*)



Fabrics to the Fore in Homefurnishings

Textiles, hand and machine woven, were of predominating interest, it was generally agreed, in the exhibition entitled "Decoration—1952," staged by the American Institute of Decorators for their 21st annual convention held in March at the Waldorf-Astoria hotel, New York City. More textiles were submitted in the annual home furnishings competition than in any of the other categories, which included furniture, floor coverings, wall coverings, and lighting. Open to the public for the first time, the crowds, which made it almost impossible to see the exhibits, indicated the growing public interest in design for interiors. More than 100 exhibits were shown by decorators and manufacturers.

First award in woven fabrics was won by Maxwell Hawker of Los Angeles, for a casement cloth combining rayon, cotton, and jute in natural tones. Mr. Hawker, long associated with handweaving in San Francisco, is now with Will Barkley and Edwin Coutu, operating under the firm name of Barkley-Coutu, in Los Angeles, handweavers of decorators' fabrics and place mats. He won first prize in the first annual decorative arts competition, sponsored by the San Francisco Museum of Art and, is a member of the Contemporary Handweavers of California.

Honorable mentions for woven fabrics were given to Marianne Strengell, well-known designer and weaver who is director of weaving at the Cranbrook Academy of Art, Bloomfield Hills, Michigan; and to Elsa Regensteiner and Julia McVicker of Chicago, for upholstery and drapery fabrics executed by Regwick Handwoven Originals of Chicago. Honorable mention for novelty fabrics went to Eugene F. Dobbertin of the School of American Craftsmen, Roch-

Handwoven fabrics designed by Evelyn Hill. From the top down. Drapery, natural and white; warp, jute and plastic, weft cotton. Silver and white, warp of wool and rayon, weft silver and wool. Black and wheat, warp of rayon, silk, plastic, mohair, glass and horsehair, wool weft. Black with warp of plastic, cotton, jute, and wool and weft of horsehair and wool.

ester, New York, for a heavy material designed for screens or wall covering woven of linen, jute, cotton, and raffia, with small multi-colored beads for accent. Harry Lawenda of Berkeley, California, won honorable mention for a wall covering which employed a woven linen on paper to produce an occidental version of oriental grass cloth.

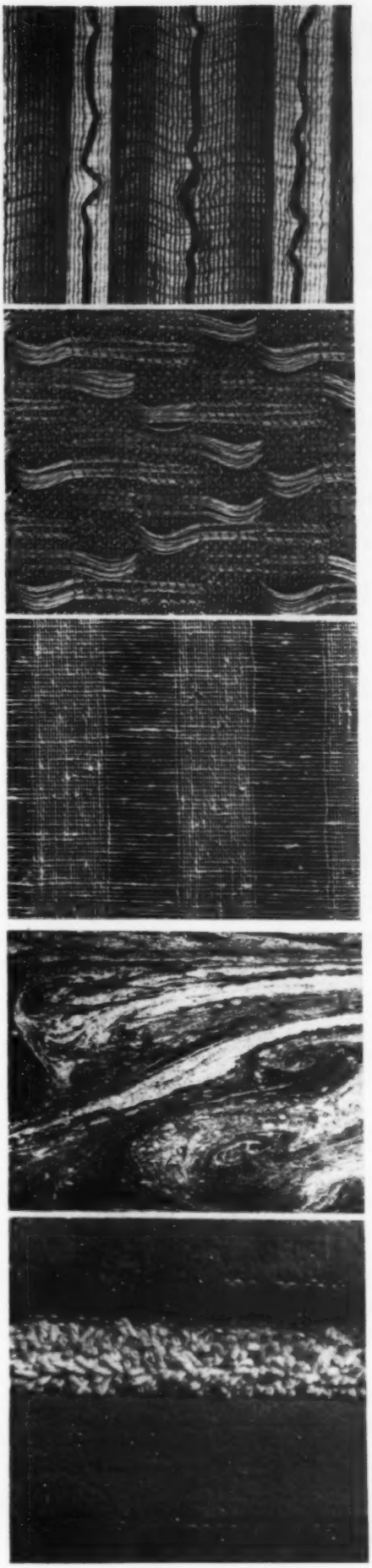
The first award for floor coverings, the marbleized design for a rug in linen, by Estelle and Erwine LaVerne of Laverne Originals, New York, in tones of green and natural, is far more effective in the piece than in reproduction. Miss Strengell also received honorable mention for floor coverings.

A collection of more than 50 handwoven textiles in brilliant colors and black used in striking designs, accentuated by display against a clear white background, was presented by Knoll Associates of New York.

Designed by Evelyn Hill, the collection shows the infinite combination which is possible both in texture and color with a bold and imaginative use of both color and weave. Eszter Haraszty, head of the Knoll textile division, was responsible for the color coordination. The collection consisted chiefly of upholstery materials, with a few drapery designs included. Colors reflect the richness, depth, quality, and brilliance that in the past have been brought to this country from South America, India, Syria, Morocco, and other foreign countries.

Representing excellent craftsmanship, the new series makes use of a wide variety of materials. To create heavily slubbed fabrics or those with a smooth, soft woolly or raw silk feeling, the basic yarn of wool is woven with raw silk, mohair, glass, hemp, linen, jute, cotton, or with synthetics such as nylon, plastic, orlon, and celticle.

Four groups of fabrics illustrated the wide variety that can be achieved by selecting a basic color for each and developing variations with a wide range of other colors. For instance, the pure saffron yellow in all wool is combined in one case with a vibrant pink, and in another with lemon yellow and black. The different combinations produce, to a certain degree, an overall tone.



From the top down, First award fabrics, Maxwell Hawker; honorable mention, Elsa Regensteiner and Julia McVicker; wall covering, honorable mention, Harry Lawenda. First award, floor coverings, Estelle and Erwine La Verne; honorable mention, Marianne Strengell.

The deep purple group is made as rich as possible by combining a wool and rayon weave in the same tone, the contrast being achieved by the difference in the yarn; when mixed with white wool the purple becomes milder. A highly dramatic effect is achieved when combined with shiny black plastic for a sparkle and to pick up lights. This same theme is carried out in green, with wool and rayon threads in the same tone for the basic color. The two contrasting weaves of green with turquoise and cobalt blue, and with black, are among the most exciting color-texture combinations.

Miss Hill, a native of Texas, arrived in New York by way of the Institute of Design in Chicago. Her early ambition was to become a sculptor but at the Institute of Design she became interested in architecture and in the functional aspects of design and while a student there she worked for Majel Chance, well-known Chicago weaver. Through this combination of activities she began to see the possibilities of color and texture in the form of fabric and the relation of the fabric to architecture and product design.

Like contemporary architecture and product design, woven fabrics are developed through the functional use of materials. When she designs a fabric for use in interior space, she usually visualizes a space largely composed of white walls. With this as a frame of reference, there are no inhibiting factors regarding the use of pure color. Every pure color can be used in relation to the size of the surrounding space and to its own intensity.

Among other exhibitors of handweaves were Boris Kroll, who showed a handsome linen in natural; The Guild for the Jewish Blind, upholstery fabrics which are woven for the custom departments of well-known textile houses; Arundell Clarke; Creative Looms, Inc., which had an unusually effective casement cloth; fiber glass used effectively by La Verne Originals; Portuguese handwoven fabrics displayed by Morley Fletcher; silks from Thaibok and Far Eastern Fabrics; reed and bamboo blinds by Abby Blum.

Efficient Warping

by JACK LENOR LARSEN

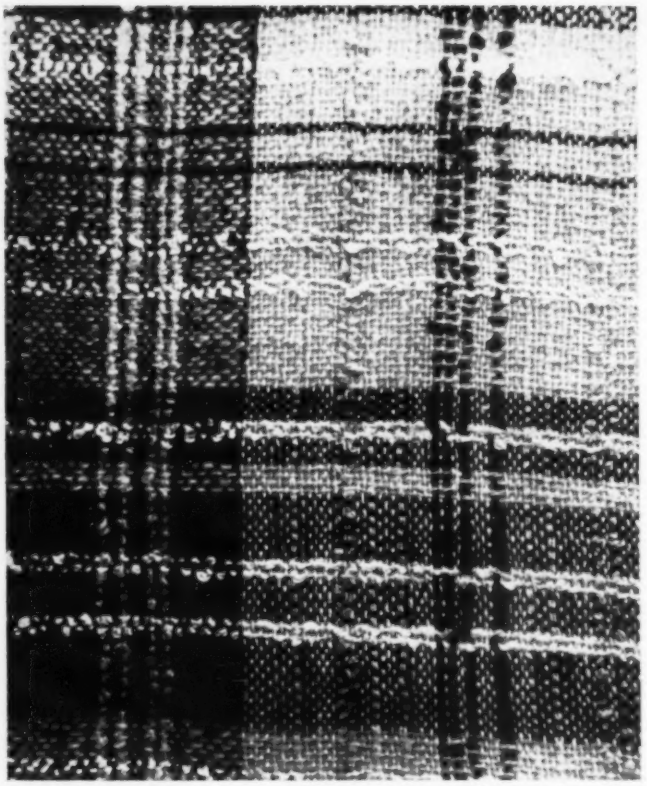
"Efficient Warping" is a continuation of "How Do You Rate Your Weaving Efficiency?" It is written for the amateur, and greatly complemented by Berta Frey's truly intelligent and more general "Problems in Warping," which appeared in the Winter 1950-1951 issue of *Handweaver & Craftsman.*

Atlhough mixed or complex warp is certainly not the only approach to fabric design, and although it is being developed at the expense of other exploration, the use of such a warp has merit: the dynamic admixture of color and dark and light, the sculptural "hand" and structural appearance make it valid. The possibility of making a richer or more serviceable fabric through the combination of characteristics of several fibers is worthy. The short warp unit makes this combination possible without great problems in weaving tension or in shrinkage after weaving. Most weavers, I believe, who have trouble with a mixed warp, have pretty much the same problem with a simple one. The elementary procedure and notes following apply in either case. The whole principle is based on establishing during the warp winding an even tension which will be transferred to the beam without combing or regard for slackness of an individual yarn.

Half of the havoc of winding a warp of mixed yarn units is not so much the difference in yarn tension as in winding tensions. A proof of this is just to consider the winding of a warp of one type of linen yarn, but with some of the yarn on swifts, others on large and small spools, and still more gliding easily from a cone. So in a mixed warp—if one of the yarns in the paddle pulls quickly from a cone, others roll from large diameter tubes that tend to wobble, back-lash, and pull off at the sides, and some catch and yank, then run smoothly from the swifts, it is nearly impossible for the weaver to obtain an even tension on the creel. The ideal of similar diameters of a uniform put-up will be approached if skein yarns and oversized packages are spooled. The large diameter tubes (like those used by Metlon) will not wobble from side to side if padded with a half-filled tube of carpet warp. The too quickly rolling tubes or spools or cones may be slowed to the right tension by taking a half or full turn about the rod above on the rack. Lastly, the running of the whole group through the fingers before the yarn enters the paddle will act as an additional check.

Especially if winding back and forth on a board, or on the Bergman type horizontal creel, the spool rack should be at some distance from the winder so as to prevent the binding of spools or the running off of tubes. The problem is better solved by threading the yarns through screw eyes spaced on a suspended rod a foot or so in front of the rack. Cones, then, will be placed directly under the eyes.

If instead of a single (1 yarn up, 1 down) cross, a group cross (3-4 yarns up, 3-4 down) is made, winding-on will be much simpler because of less friction at the lease sticks. If six yarns are used in the paddle, the first three will be right-left, the second three left-right at



Experimental plaid using irregular threading and varied yarns, ranging from rope-like cottons to fine threads of glass and linen.

the cross. Both divisions go around the end peg together, then divide again for the recross. Twelve or sixteen ends are divided four ways. An alternate of the small-group cross is that of making a cross at both ends of the warp: a unit cross with which the warp is beamed, and a single cross for threading. If, instead of an alternate-bore type of paddle, one is used with the hole-slot sequence that forms a shed, make sure that the shed is not made so that count is missed. When the warp group is split up into two or more cross units, be certain that the end loop, as well as the cross, is bound; the first lease stick and warp stick will have separate sheds. Also, for rather obvious reasons which this weaver only once ignored, a split cross usually cannot be transferred to the front of the reed so as to use the reed for a spreader as in the Harndon Method.

Different warps and different warpers will find one system more advantageous than another. The one summarized below is tried and true; for the warp unit type of mixed yarn warp I have found it to be the best.

Spooled yarns are placed on a spool rack, through a warping paddle in order of sequence, and wound in a group cross. Each warp group is laid parallel to its predecessor on the creel until the warp begins to pile up. On a heavy warp of a wide width this may occur when one-fourth is wound; in this case the warp will be chained off four times.

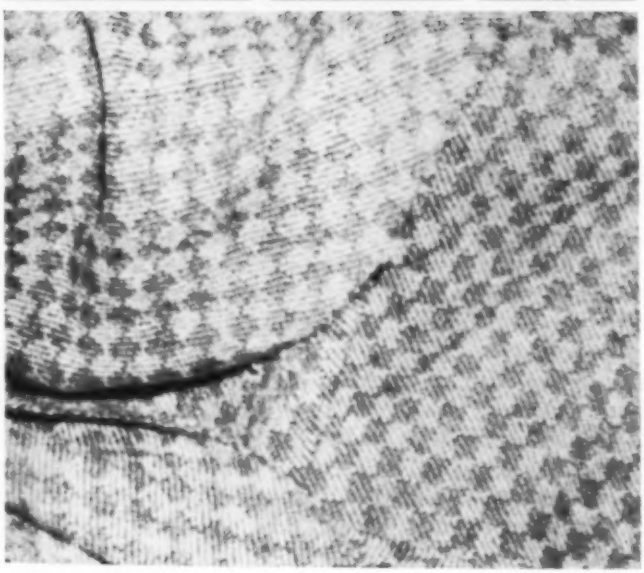
Before chaining, the warp is tied at three places on the cross end; it is tied firmly (but with bow knots) at about every two yards of its length. When several chains are to be made, these ties should be at the same bar on each chain so that a tension check can be made during the rolling-on.

The beater or reed is removed from the loom; the

heddles are pushed to the side or the harnesses dropped. A 1″ x 2″ x 4′ larry stick is made to bridge the front and back beam at either side of the loom. These support the raddle in front of the harnesses, the lease sticks and warp sticks behind.

The two or more chains are pulled over the breast beam and slipped onto the lease sticks; the warp stick is inserted through the tied loops; the bindings are cut. The warp is spaced in the raddle (spreader). To prevent the warp from slipping out of the raddle a taut string is intertwined through the pegs above it.

The chains are pulled out to the first binding (if space permits, to the second), and the warp reined until parallel and smooth. One or two warp holders grapple the warp between ten fingers, twist in their wrists to tighten the selvedge. Because combing is *verboten* and any loose yarn is pulled onto the beam, the first yards are wound easily and evenly. The holder then retreats to the second binding, and so on. On wide heavy warps the holders may be worth all sorts of bribery. If they cannot be found, the winder himself may pull the warp taut between windings. The weight system may be used; or, if space permits, the warp may be unchained for some distance and secured at a binding to a weighted spool rack. In winding, the rack should drag along the floor with enough resistance to hold the warp firm. With admirable result and great expedience I have on occasion wound on alone directly from the weighted warping creel.



On pages 32 and 45 of her "Problems in Warping" Miss Frey describes her own for a mixed yarn warp in which she winds, chains, and ties to a dummy each yarn type—independently. The advantages are several: it is possible to use up a tag end of yarn without first figuring its yardage; in winding onto the beam, the tensions may be controlled individually; the scale of the repeat may be larger than a paddle unit warp without going into the laborious cut-and-tie-and-count system of warping. This is especially significant as a practicable deviation from the four-to-a-dozen yarn repeat that sometimes seems to have become a new academism. For counter-paning, it is especially applicable. I have also found it useful in combination with the paddle group method in those cases where a heavy, wiry linen, or a spongy 3-cut chenille, or resilientless soutache is combined with the regular yarns. In this combination, I have cut the ends of the extra warp, threaded it through the raddle and cross, and tied to the warp stick just before beaming.

More weavers would use a raddle or spreader if they knew how simply one could be made from a long enough 1″ x 1″ board, and 2″ nails spaced about an inch apart. They would find paper easily put in if it were on a continuous roll instead of in sheets. A smooth, non-bulky stick is that taken from discarded venetian blinds. If warp should slide towards the edge of the warp beam, nails lightly driven into the back beam above may serve to guide it; fringing the edges of the paper between is sometimes corrective. As a replacement of or as an addition, the yard round, drum beam is especially a boon for heavy warps. Hard end shoe strings make ideal ties for lease sticks.

Even with satisfactory 6, 8, or 10 dent reeds, the greatest difficulty with overscaled warps is the occasional knot in a heavy yarn. In making a simple warp one can take a knotted yarn back to the end peg, and achieve perfect weaving with a minimum of mending. However, on long warps, on paddled warps and sectionally beamed warps, and on warps in which cost of yarn per yard is high, going back to the end peg may be undesirable. As an alternative, San Francisco's Rosemary Antonacci has an ingenious method which runs like this:

The knot is left as it is, but from it the warp is doubled back for two feet. Here both yarns are tied together with a firm slip knot; the warping proceeds. As the slip knot nears the heddles it is yanked loose and the surplus yarn with the hard knot pulled through heddle and dent to be woven into the fabric with a Liebes mending needle. Should the knot be in chenille, it is simply cut out and the weft of the chenille shredded out until the two sets of core yarns can be tied close with a square knot.

It is my sincere wish that this brief treatise and its predecessor, "How Do You Rate Your Weaving Efficiency?" in the winter issue have helped some weavers in technical problems, thus freeing them for the more engaging concern for design!

Top, upholstery with two warp yarns, black cotton and heavy novelty cotton, and two wefts, black cotton and lighter weight white. Bottom, six-harness damask of gray wool and spun silk.

Rosalind Ray Watkin, instructor at the Richmond Art Center, displaying one of her fabrics.

The Richmond Art Center a Unique Adventure

DOROTHY BRYAN

Unique on the Pacific Coast, and rare elsewhere, is the Richmond, California, Art Center which provides a completely integrated service to the community under public sponsorship. Here, in one structure, of modern functional design in red brick, aluminum, and glass, are centered all the cultural and recreational activities of the community.

The important position the Art Center holds in the community, where its services extend beyond the Center itself to dozens of activities and events throughout the city, arises from the attitude maintained by the city recreation department. To quote Mrs. Hazel Salmi, director of the art center and supervisor of the art division for the recreation department, "The community has as much responsibility for the art activities of its people as it has for other forms of recreation."

The Art Center, formally organized in 1938, had its beginnings a number of years earlier when Mrs. Salmi gave classes in arts and crafts with no sponsorship and no facilities but the equipment she herself possessed. Later, the Richmond Evening High School sponsored the classes. At first she was the only instructor, but as interest grew, the classes were expanded to accommodate the increase in attendance, resulting from an enormous influx of population due to shipbuilding. The city recreation department assumed sponsorship in 1943.

In addition to the above mentioned classes, the Art Center service was increased to include training classes for leaders of youth groups organized in churches and community chest agencies, in-service craft training for playground directors; supervision of handcraft projects in the city playgrounds; acting as repository for materials and supervising the decorating for carnivals, plays, dance festivals, and special events such as Christmas and Haloween parties, and other activities held at the Art Center.

The Art Center also provides personnel and advice to the arts and skills project of the Richmond Red Cross chapter; administers the fund for handcraft supplies and supplies volunteer personnel for the Crippled Children's ward of Permanente Hospital; planned and coordinated interior decoration for the Richmand Memorial Youth center and does screen printing for city departments. A center shop handles supplies at retail for students, and an outlet is provided for the work of competent craftsmen.

When Mrs. Salmi surveys the new Art Center she has reason to be proud of its achievements, but she says, "I am glad we started with nothing rather than all the present beautiful facilities, since it has proved the need in the community, whereas the beauty of the facilities might attract many who otherwise would not come."

The new Richmond, California, Art Center wing.

The need for new quarters was indicated by figures of enrollment for the year preceding: 10,535 adults, and 3,396 teenagers, in Art Center events, and instruction in arts and crafts to 26,963 children on city playgrounds by staff members.

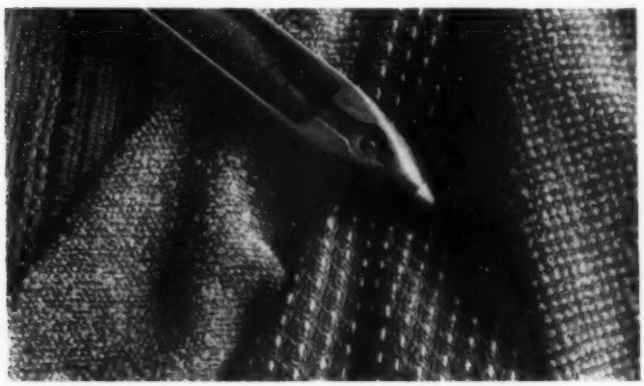
She takes little credit to herself for the present Art Center, saying that it was the result of the work of many public-spirited citizens and the happy choice of the late Timothy Pfleuger, who, although he didn't live to see his plans carried out, was the architect responsible for developing the entire Civic Center as a related whole, giving it a unified appearance. It was also because of him that the Municipal Auditorium, with its hydraulically operated jacks for tilting the main floor, complex lighting system, separate committee rooms and many other features, has great flexibility for community use. After Mr. Pfleuger's death, the plans were developed by his brother. Nevertheless, it was she who supervised the planning of the interior of the Art Center, having learned through the years just what the needs were.

The painting and weaving studios are separated by folding walls that can be thrown open to provide a large room, when needed. Since all of the staff aided in the interior planning, the wall cabinets, cupboards, drawers, shelves and the like are ideally suited to their special needs.

In addition to Mrs. Salmi who supervises all of the activities of the center and acts as curator in addition to her class in metalcraft, the staff includes; Madeline Rodini, pottery; Ramona Germeshausen, jewelry and metalcraft, youth group leader training, evening weaving and children's painting; Alice Boyer, leathercraft and playground craft activities; Audrey Garrard, silk screen; William Donaldson, adult painting; Raymond Bowles, night jewelry; Sally New, playground crafts, leathercraft for teenagers, and Rosalind Ray Watkin, daytime weaving.

Mrs. Watkin is a graduate of the University of California and studied design and weaving under Marli Ehrman and Else Regensteiner in Chicago, where she was, for a time, employed as an interior designer. A member of the Contemporary Handweavers of California, she has exhibited extensively.

Only adults are enrolled in the weaving class and are interested in handweaving primarily as a hobby. Like



Fabrics designed and woven by Mrs. Watkin. From left, 1, cotton and rayon bedspread deriving interest in varied sizes of weft shots and contrast in dull against shining finishes. Set up in Summer and Winter with skipper blue warp, weft is dark green rug yarn and rug filler, dark blue chenille and turquoise rayon boucle'. 2. Tweed for woman's coat with warp of spruce and heather green wool and weft of pale blue looped mohair, woven in basket weave on a twill set-up. 3. Upholstery for rugged use set in a twill variation with skipper blue warp and the same in weft plus blue and yellow jute. Done in complicated treadling using 8 treadles. 4. Prize-winning woman's coating in spruce and heather green and turquoise wool warp and weft of greens in heather and nubby wool and looped mohair in magenta, purple and pale blue. Looped mohair combined with wools in each pick to add thickness and blend colors. Woven in basket weave on twill set-up.

others, Mrs. Watkin has found adults usually come to a weaving class with preconceived ideas of what they want to do and that the most effective method of encouraging them to become interested in experimentation and creative weaving is through suggestion.

Beginners are started out on small table looms on which they weave their first pieces in 2-harness weaves, learning to control the loom and to understand juxtaposition of color and the results obtained through combinations of various textures of threads. If their interest is serious, they then progress to floor looms with 4-harness set-ups. Whenever possible, Mrs. Watkin has several in the class work on a community warp in order to demonstrate the versatility of warp through change

Richmond Art Center weaving class showing well-planned storage cupboards and bins in background. Mrs. Watkin, instructor, standing in foreground.

of tie-up and treadling and the introduction of various weft threads. By having students weave samples first, she has found it possible to get two or more to agree on a common warp which each develops in her own way. In class-room procedure she favors the use of community warp because it encourages students to help each other, speeds up the learning process, saves money for the students, and saves time on the looms that can be used for further projects.

Mrs. Watkin also believes that it is helpful for students to have experience in various types of looms and the studio is equipped with both counter-balanced and jack-type looms as well as with plain and sectional warp beams. By the time the students have completed a year's course, they not only feel at ease with the equipment, but have gained enough experience to judge what kind they prefer for their own use at home.

While her own interests are primarily in achieving new and interesting textures through structural design and choice of threads, she does not object to her students using traditional patterns as a basis for their work, so long as they develop their own interpretations. She has found that her students, in the long run, respond to her encouragement to experiment.

The Art Center sponsored its first exhibition of water colors, prints, and decorative arts last spring which was so successful that it is planned to make it an annual affair. Work was selected by jury. The annual student exhibition, discontinued last year because of the move to new quarters, was held later in the spring. The U-shaped wing of the Memorial auditorium, which now houses all the activities of the art center, provides an unusually spacious exhibition gallery, well-lighted, with birch walls, which greatly simplifies problems of installation.

Keen Interest in Carpet Design Competition

Marianne Strengell, director of weaving at the Cranbrook Academy of Art, at work on a design for the Fleischman Carpet Design Competition.

Following the extraordinary success of the first national carpet design competition in 1951, the Arthur Fleischman Company of Detroit, again with the cooperation of The Detroit Institute of Arts, last spring announced the second competition for 1953, international in scope. Almost 2,000 entries already have been received by the company from the United States and foreign countries. The first competition attracted 1,200 designs from 47 states and many inquiries from foreign countries, indicating an interest which led the company to open the contest to foreign artists.

This competition is open without limitation except for employes of the sponsoring company. Prizes amounting to $2,100 will be awarded and the design winning the $1,000 first prize will be placed in immediate production. Other prizes are as follows: second, $250; third $150; fourth, $100; and ten honorable mentions of $50 each.

Prize winners will be announced in February, 1953, and top ranking designs will be exhibited at the Detroit Institute of Arts March 3 through April 5, 1953. Afterward they will be sent on an international tour of museums.

Entry blanks and competition details are available at art schools and museums through the country and abroad or may be obtained by writing to the Arthur Fleischman Carpet Company, 12585 Gratiot Avenue, Detroit 5, Michigan. Entries close January 1, 1953.

Winning designs will be selected on the basis of originality, color harmony, and practicability. Members of the jury include top authorities in the fields of art, interior decoration and design, and carpet manufacturing. They are: Dr. Edgar P. Richardson, director, Detroit Institute of Arts, chairman; Hollis S. Baker, one of the nation's foremost designers of modern furniture and president of Baker Furniture, Inc., Grand Rapids, Michigan; Charles Eames of Los Angeles, California, designer and architect; Belle Krasne of New York, editor of Art Digest; Charles Nagel, director, Brooklyn, New York, Museum; Frank Masland, president of the National Association of Carpet Manufacturers and president of C. H. Masland and Son, Carlisle, Pennsylvania, carpet manufacturers; and Eero Saarinen of Bloomfield Hills, Michigan, designer and architect.

With the complaint that "there hasn't been a new carpet design in 70 years", Mr. Fleischman pioneered the search for new designs with a national competition in 1951. "The national competition proved the eagerness of artists, designers, and even housewives untrained in art, to instill new life into an old business and the general public's willingness to accept new ideas," he said. "The 1951 competition began a trend toward new designs in carpet manufacture which the 1953 project will emphasize and expand on an international scale."

Dr. Richardson described the competition as an outstanding example of the growing cooperation between the worlds of art and industry.

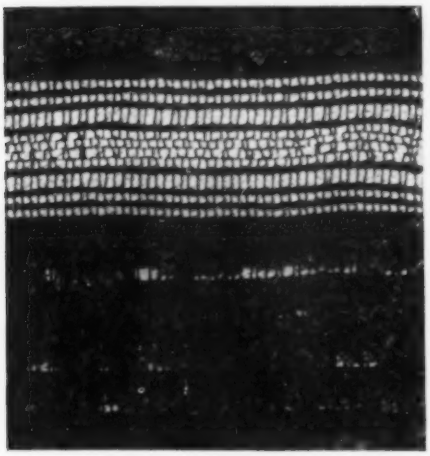
"We feel it is an important function of the museum to encourage excellence of design outside museum walls as well as within them. The Fleischman competition will help us achieve this purpose as well as offer an unusual opportunity for artists of promise to put their talents to use in a practical field," he said.

American artists will face keen competition with the entries already received from Chinese artists in Hong Kong and Formosa and from weavers and designers in India, Ethiopia, Algeria, Ecuador, and Australia, as well as from European and other foreign countries.

"While we anticipated keen interest from Europe and America, we are particularly pleased that this opportunity for artists is welcomed by those of other continents," Dr. Richardson said.

Textured Rugs from the Pacific Coast

Her first sight of growing cotton inspired Kamma Zethraus of Kentfield, California, to design and weave the rug illustrated here. The figure represents three cotton bolls spilling cotton toward the center. It is woven on a heavy linen warp, the background in brown oxhair, with its shining surface woven in diagonal twill, representing the outer covering of the



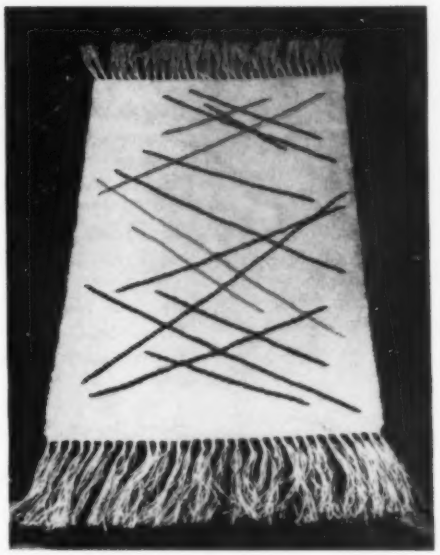
Flossa knots and tabby, Mrs. Wilson.

boll. Bleached worsted in tight flossa knots represents the cotton. So that the pile would remain erect, the knots were woven in five rows to the inch with two rows of oxhair between. The lines shaping the cotton are of natural mohair tied in extra long knots. The rug is 54 inches in diameter. After it was removed from the loom, an entire day was spent with the scissors, shaping the design. The lines of mohair were cut nearly to the background and the worsted rounded where it followed the mohair lines. The rug was cut round and bound with tape.

Tufted rug, Lucille Douglas Clark.

Mrs. Zethraus, who came to the United States from Denmark, has been associated with the Dorothy Liebes Studio in San Francisco ever since it was organized and is now in New York with Mrs. Liebes. After her arrival in the United States, she began to weave as a hobby. In Denmark she had had a little training in art in a private school, but no weaving. She studied first with Mrs. Valborg Gravender in her School of Swedish Applied Arts, now at Mill Valley, California. Her experience in the field began with Mrs. Liebes.

In 1936-37 she studied weaving and spinning at the Lansdochstads Hemslajdsforening in Stockholm and visited other centers in Sweden. She has taught weaving at the High School and the Dominican Convent College in San Rafael, California. Her first work, a drapery called "Calla Lily," was exhibited at the Golden Gate International Exposi-

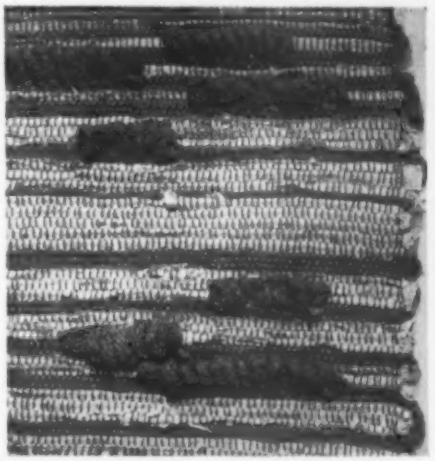


Wrapped weave, Mrs. Clark.

tion in San Francisco in 1939. Since then her fabrics have been widely shown. She is a member of the Contemporary Handweavers of San Francisco and the Marin Society of Artists, Ross, California.

In the illustration showing the rug on the loom, the ragged ends of mohair extending above the worsted pile indicate where Mrs. Zethraus later cut to indicate the lines of her design. A paper pattern the exact size of the rug was drawn and placed under the warp to enable her to follow the lines accurately. The pattern was wound onto the cloth beam with the rug. Because she found that linen warp stretches, she allowed for a 4-inch difference in making her drawing.

Lucille Douglas Clark of Seattle is an entirely self-taught weaver. She first began to weave after graduating from the University of Washington, where she majored in art and design.



Flossa loops, by Jean Wilson.

After a few years' teaching in a cooperative workshop, she now weaves almost entirely for decorators in Seattle, and Portland, Oregon, producing drapery and upholstery fabrics, table linens, bedspreads, and rugs. Mrs. Clark's work has been widely shown, both on the Pacific Coast and in Eastern exhibitions.

In the tufted rug shown, Mrs. Clark used white rug wool and a heavy pink linen alternating in the weft against a black carpet warp with white wool for the tufts and the added fringe. This was planned for use

(*Continued on page* 47)

Knotted rug—Kamma Zethraus.

EXHIBITIONS
of Interest to the Handweaver & Craftsman

JULY

Second New England Craft Fair, Maine's Massachusetts House Workshop, Lincolnville, Maine. July 14-19.

Fifth Annual Craftsman's Fair of the Southern Highlands, City Auditorium, Asheville, North Carolina. July 21-25.

"Good Design," Merchandise Mart, Chicago, Illinois.

Sixteenth Ceramic National, University of Minnesota Art Gallery, Minneapolis. Through August 24.

"Young Americans," America House, 32 East 52nd Street, New York City. Through September 5.

Vermont Craftsmen's Fair, St. Johnsbury. July 17-19.

The Living Arts, Silvermine Guild of Artists Galleries, Norwalk, Connecticut. Juried exhibit of crafts, architecture, and industrial design co-sponsored by The Silvermine Guild of Artists and The Society of Connecticut Craftsmen. July 13-August 1.

Huckleberry Mountain Workshop, Hendersonville, North Carolina. Tenth annual exhibit. July 22-29.

Maine Coast Artists, Upstairs Gallery, Rockport, Maine. July 20-August 20.

Pennsylvania Guild of Craftsmen, Dickinson College, Carlisle. Fifth annual craft fair. First day, July 31, devoted to exhibits, demonstrations, and panel discussions for **craftsmen only** (fair officially opens that night). Open to public following day. August 1-3.

Contemporary Handweavers Association of California, M. H. de Young Memorial Museum, San Francisco. Fourth annual exhibition. Through July 27.

International Conference of Craftsmen in Pottery and Textiles, Dartington Hall, Totnes, Devon, England. To July 27.

Exhibit of Swedish Textiles and Handicrafts, National Museum, 10th and Constitution Avenue, Washington, D. C. Sponsored by Potomac Craftsmen Guild of the Washington area. Includes napery, upholstery, and drapery, also bookbinding and collection of Orefors glass. Through July.

New York Botanical Garden, Bronx Park, New York City. Exhibition of fabrics, wallpaper, glass, and objects of art which reflect the influence of plant forms on design. Continued through summer.

The Scalamandre Museum Traveling Exhibits, "A Panoramic Review of Textiles," Children's Nature Museum, Rock Hill, South Carolina; "Chinese Silks of the Manchu Dynasty," Hunter House, Newport, Rhode Island; "Textiles used in the Post-Revolutionary Shrines of America," Speed Art Museum, Louisville, Kentucky; "Abstract Design in Printed Modern Textiles," The Scalamandre Museum of Textiles, New York City. Through July.

Men of the Montana, Museum of Natural History, New York City. Exhibit of a Peruvian rainforest. Indefinite.

Made in the U. S. A., Lyman Allyn Museum, New London, Connecticut. Part of the Index of American Design, circulated by the American Federation of Arts. Through September 15.

AUGUST

Brick Store Museum, Kennebunk, Maine. Twelfth Annual Exhibition. Creative work by museum members. Includes paintings in all mediums and crafts of all kinds. Membership opened to out-of-state craftsmen. Membership blanks upon request. Entries must be at museum by July 15. Juried. August 5-30.

Fourth Annual Cape Cod Craftsman's Fair, Osterville, Massachusetts. Held outdoors. Sponsored by The Community Church of Osterville. August 12. 10 A.M.-8 P.M.

Nineteenth Annual Craftsman's Fair of League of New Hampshire Arts and Crafts, Belknap Recreational Area, Gilford, New Hampshire. August 5-9.

California Crafts, Currier Gallery of Art, Manchester, New Hampshire. August 1-September 15.

Sixteenth Ceramic National, University of Minnesota Art Gallery, Minneapolis. Through August 24.

"Young Americans," America House, 32 East 52nd Street, New York City. Through September 5.

"Good Design," Merchandise Mart, Chicago, Illinois.

Virginia Highlands Festival of the Arts, Abingdon. August 9-23.

Pennsylvania Guild of Craftsmen, Dickinson College, Carlisle. Through August 3.

Vermont Craftsmen's Fair, Arlington. August 14-16.

Saranac Lake Study and Craft Guild, The Town Hall, Saranac Lake, New York. Annual show. August 16-23.

Craftsmen at Work Exhibition, Vocational High School, Halifax, Nova Scotia. August 19-23.

California State Fair Open Air Art Show, State Fairgrounds, Sacramento. Art in action will include weaving, jewelry making, and ceramics. August 28-September 7.

Pennsylvania Dutch Days, Sports Arena, Hershey, Pennsylvania. August 21-23.

Canadian National Exhibition, Toronto, Canada. August 22-September 6.

Exposition, Quebec, Canada. August 29-September 7.

Pennsylvania Dutch Folk Fair of Central Pennsylvania, Fairgrounds, Selinsgrove, Pennsylvania. August 29-September 1.

Intertribal Ceremony, Gallup, New Mexico. Some 30 Indian tribes participate. August 7-10.

The Scalamandre Museum Traveling Exhibits, "Modern Design in Woven Textiles," Wustum Museum, Racine, Wisconsin; "Abstract Design in Printed Modern Textiles," The Scalamandre Museum of Textiles, New York City. Through August.

Maine Coast Artists, Upstairs Gallery, Rockport, Maine. Through August 20.

Massachusetts House Workshop, Lincolnville, Maine. Decorative Arts for the Home. August 4-23. Maine Weavers and Potters, handweaving in creative designs and traditional patterns, pottery made of native Maine clay. August 25-September 13.

SEPTEMBER

Los Angeles County Fair, Pomona, California. September 12-28.

California State Fair Open Air Art Show, State Fairgrounds, Sacramento. Through September 7.

Italy at Work, Toledo, Ohio, Museum of Art. September 7-October 22.

Sixteenth Ceramic National, Dayton, Ohio, Art Institute. September 6-28.

"Young Americans," America House, 32 East 52nd Street, New York City. Through September 5.

"Good Design," Merchandise Mart, Chicago, Illinois.

California Crafts, Currier Gallery of Art, Manchester, New Hampshire. Through September 15.

Canadian National Exhibition, Toronto, Canada. Through September 6.

Exposition, Quebec, Canada. Through September 7 .

Massachusetts House Workshop, Lincolnville, Maine. Antiques and Glass. September 15-October 12. Maine Weavers and Potters Exhibit continued through September 13.

Good Design, Museum of Modern Art, New York City. Opens September 24.

Chicago Weavers Guild, Chicago Public Library. Through September

Eastern States Exposition, Massachusetts Building, Springfield, Massachusetts. Weaving, hooked rugs, pottery, painted trays. September 14-21.

OCTOBER

Italy at Work, Toledo, Ohio, Museum of Art. Through October 22.

Sixteenth Ceramic National, Corcoran Gallery of Art, Washington, D. C. October 10-November 2.

Massachusetts House Workshop, Lincolnville, Maine, Antiques and Glass. Through October 12.

National Hobby and Handicraft Show, Palace Pier, Toronto, Canada October 21-23.

NOVEMBER

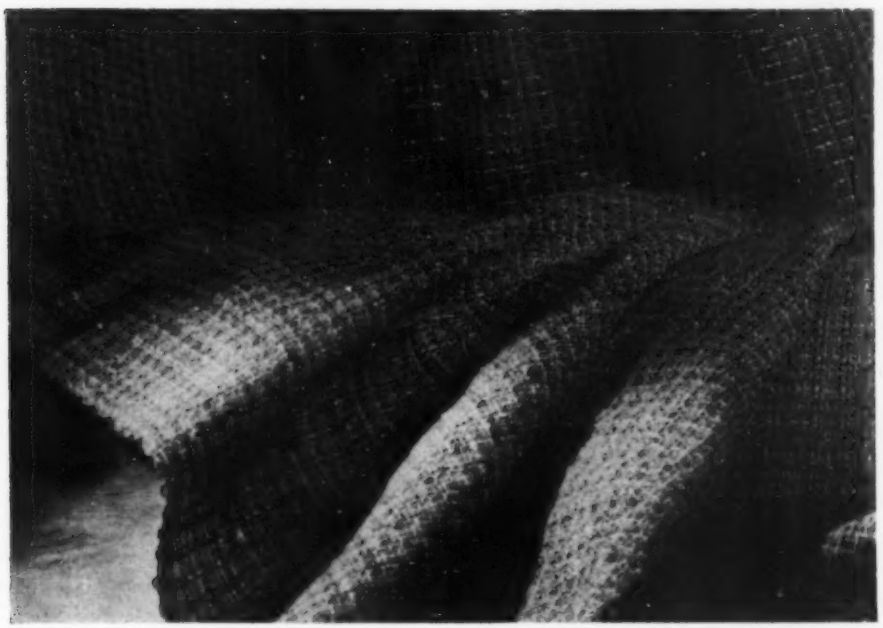
Seventeenth Ceramic National, Syracuse, New York, Museum of Fine Arts. November 9-December 7.

Tropical Weavers of Florida, West Palm Beach, Florida. November 8.

"Good Design," Merchandise Mart, Chicago, Illinois.

Fiber, Clay, and Metal, Helen Bunn Competition for American and Canadian Craftsmen, St. Paul Gallery and School of Art, November 17-December 24. Seminars, November 17-29. Information, Delmar Kolb, St. Paul Gallery, 476 Summit Avenue, St. Paul 2, Minnesota.

Covering the EXHIBITION CIRCUIT



Drapery, Anne Somers. Rust, with maroon accent, metallics, plain weave, attractive texture in open effect, but a firm fabric. Not on exhibition.

Contemporary textiles, ceramics, metal work, and other crafts shown in the first annual exhibition of "Massachusetts Crafts of Today," at the Worcester Art Museum April 5-May 11, compared more than favorably with national and regional shows, which attract entries from many states. This work was, moreover, almost all representative of current production, since the time between the announcement of the show and its opening did not permit many craftsmen to produce anything especially for exhibition.

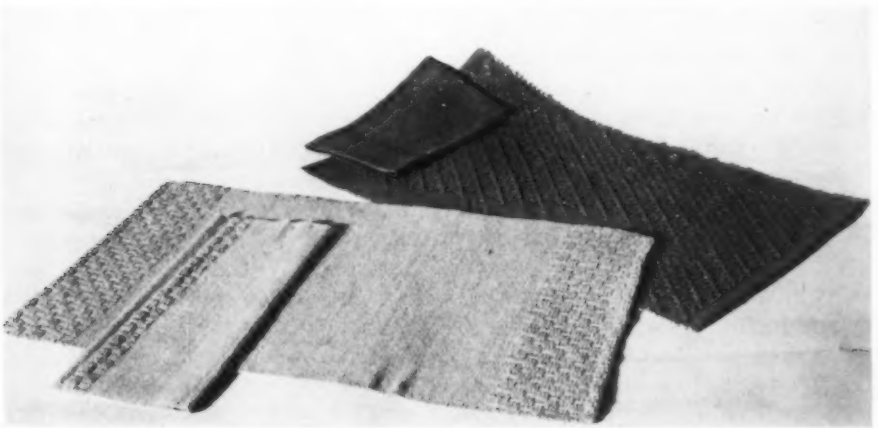
Two hundred and thirty objects were selected, representing 105 craftsmen. Only work of original and contemporary design, done preferably within the last two years, was eligible for consideration since this exhibition, the first of a contemplated series, had for its objective the encouragement of original craft work of high standard with design "unmistakably that of the middle of the 20th century." The project was organized by Massachusetts art museums in collaboration with the Massachusetts Association of Handicraft Groups.

The series was suggested by Mrs. George W. Patch, chairman of the Massachusetts Association of Handicraft Groups, as a means of bringing recognition to craftsmen who are producing original work of high standing and of encouraging others to improve the quality of their work. Her efforts to inform craftsmen of the objectives of the exhibition, and the interest of the various groups in the state association, were largely responsible for enthusiastic cooperation from craftsmen. The exhibition was open to everyone and as usual in an "open show" a few hitherto little known craftsmen were represented by outstanding work.

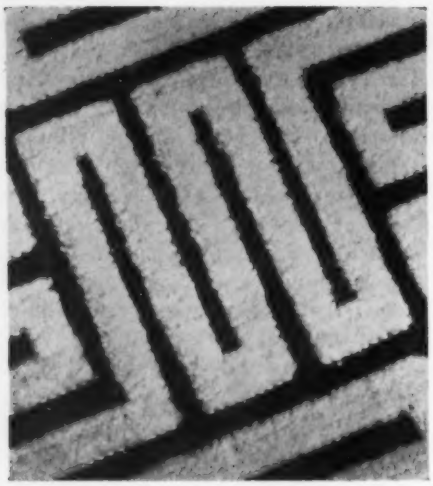
Forty-two woven fabrics were shown, the work of 22 weavers. Potters exceeded weavers by two, 24 showing some 70 pieces. It was somewhat of a relief to see weaving in the contemporary manner which was not so self-consciously experimental and which confined itself more or less to "classic" fibers. Little question could be raised about the wearing qualities of textiles in this exhibition.

Weavers were more restrained in their use of color than the textile printers but used color effectively and achieved many beautiful, subtle effects. The hanging of woven material in plain colors along with printed fabrics should inspire more craftsmen in these related fields to work in collaboration and arouse textile printers to the possibilities of using

Woven mat and napkin by Janet C. Ticknor. Silver by Charles Reese.



Left, mat in oyster white linen by Miss Edwina Lytle, right, mat in coral linen, with natural threads, by Mrs. Grace Reed.



Detail of rug by Beatrice and Viola Anderson.

handwoven fabrics which offer them many possibilities, so far neglected.

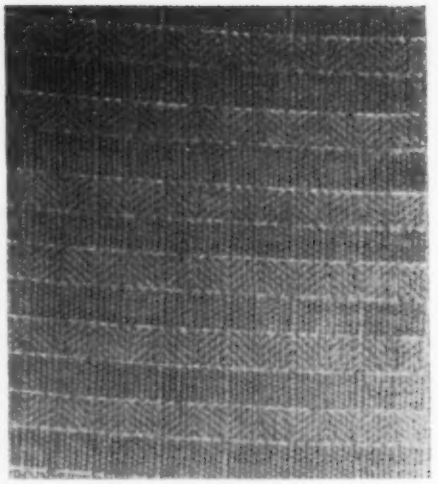
Among weavers, Robenia Myrer Hendrich, who has become well-known for her beautiful linen drapery fabrics, showed in addition lightly woven wool stoles in pastel colors and a handsome length of silk and wool material in gray and green. Rugs, both in knotted and weft-faced styles, by Viola and Beatrice Anderson, were strongly designed and firmly woven. Vincent Newton, a relative newcomer, won praise for some outstanding drapery fabrics, one with stripes of plain weave and twill in yellow and natural, and one woven of a blue-gray boucle and fine green yarn, a study in subtle color effects. He also used artificial straw, with a stripe of single green and gold metallic for a handsome upholstery fabric. Place mats, which usually are not of museum caliber in such numbers, deserved the prominence given them. Among unusual designs were those of Helen Barrett, Josephine E. Estes, Jacquelin W. Hubbard, Marilyn Lund, Edwina M. Lytle, Grace Corbett Reed, Kate Van Cleve, Elizabeth Graham Thorsen, Sadie May Morse, Ruth E. Pfau, Janet C. Tichenor, among others. Ruth Howland Morris showed a mat of handspun, handwoven, madder dyed flax and wool, in combination with the black and white of natural wool. Miss Estes' design was suggested by the Women's Educational and Industrial Union, Boston. Marjorie Merritt had an interesting experiment in krabba in wool and linen. Drapery and upholstery fabrics by Anne Somers, now in charge of the weaving shop at Old Sturbridge Village, attracted favorable attention, notably one in light yellow wool and silk with lace stripes. Among other weaving shown was an attractive blue and silver belt by Katherine May Andrews; coat material by Patricia C. Hill, and a stole by Germaine E. Ratté.

The uniformly high standard of all work indicated both a careful statement of conditions and expert judging. Selection of the objects to be shown was made with the advice of two members of the committee representing the collaborating art museums, Miss M. Louise Lochridge, director of the George Walter Vincent Smith Art Museum, Springfield, and Frederick P. Walkey, director of the de Cordova and Dana Museum, Lincoln. However, the final responsibility for the pieces selected rested with the curatorial staff of the Worcester Art Museum. Much more time was given to consideration of the entries than is often the case for the juried show when the judges view hundreds of entries in one or two days. Special consideration was given the doubtful pieces. Adequate time for judging and time to allow "a second thought" should be given more consideration by sponsors of craft shows, in the opinion of many people concerned with the improvement of standards.

This first exhibition was considered frankly of an exploratory and experimental nature, an effort to gauge the state of contemporary craftsmanship in Massachusetts today, according to Miss Louisa Dresser, curator at the Worcester museum and in direct charge of the exhibition. Although slightly more than 100 craftsmen were represented, she believes that many more could have submitted suitable work if they had known of the exhibition in time.

With more widespread knowledge of the objectives of the exhibition, it is expected that next year's entries may present an entirely different appearance, with craftsmen concentrating on creative designs well in advance of their current production. The danger a successful craftsman faces is that he will tend to repeat successful work, unless he is given some special incentive to create designs in advance of the market.

The highly professional quality of the work was deeply gratifying to the sponsors. It was interesting to note that exhibiting craftsmen, regardless of age, had sound backgrounds in their chosen fields. Some sixty-six had the equivalent of art school training and three had served formal apprenticeships. Among exhibitors were one architect, one sculptor, and 28 teachers. Over 40 exhibitors are apparently active professionally in their various fields and many others sell work regularly. Observation revealed that craftsmen who had learned "on their own" had made themselves professionals. Forty-six exhibitors were natives of the state and only eleven foreign born. Of the 87 who gave their ages 31 were born after 1920, and 16 before 1900.

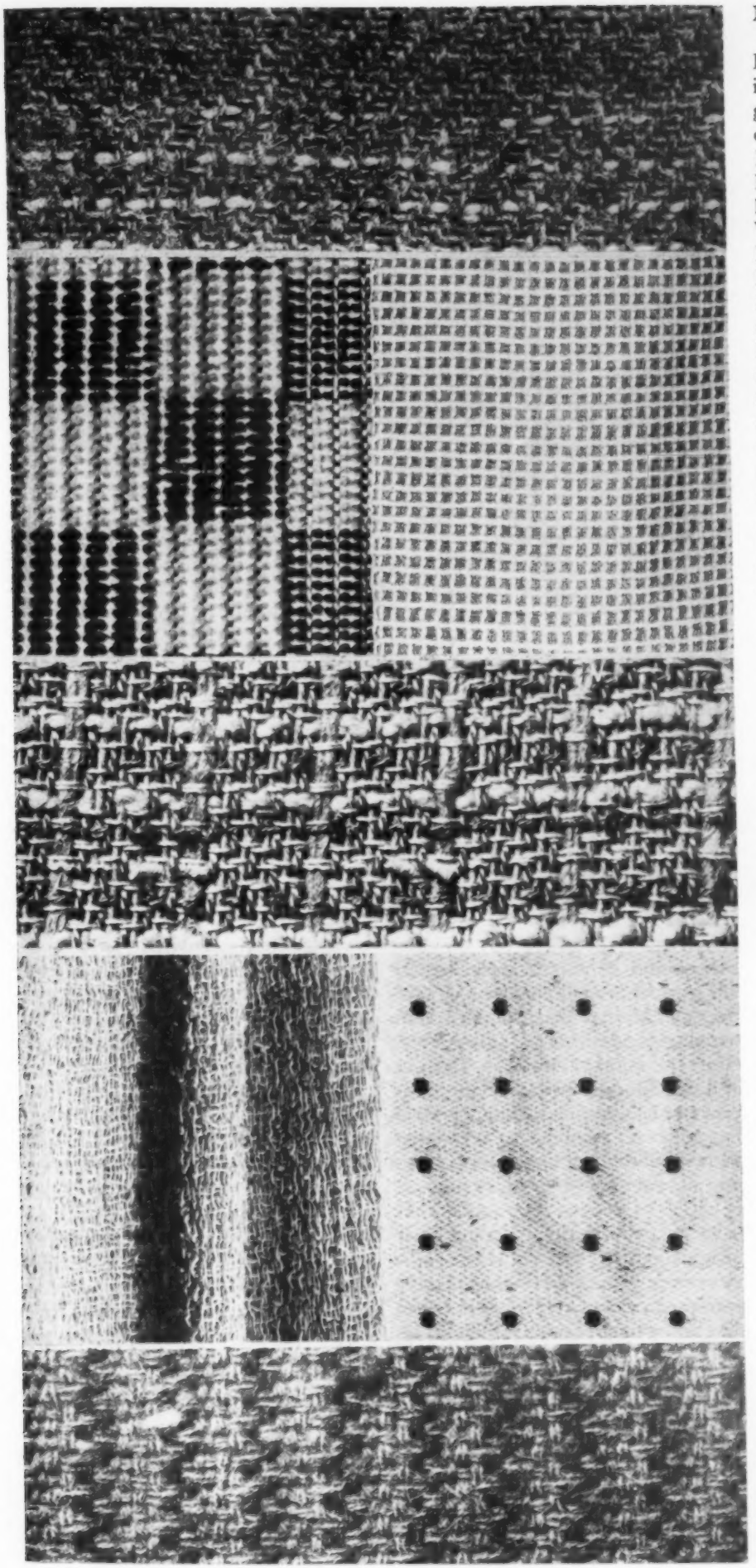


Drapery by Vincent Newton. Stripes of plain weave and twill.

Massachusetts craftsmen were fortunate to have an unusually beautiful installation in three large rooms on the top floor of the Worcester Museum, done by the museum staff assisted by John Herron, a member of the museum. Each craft was shown to its full advantage, a great benefit for weaving, which is so often used only as a background for other crafts.

Next year's exhibition will be held early in the spring at the de Cordova and Dana Museum and Park, Lincoln, Frederick Walkey, director.

Collaborating art museums for the program are: Addison Gallery of American Art, Phillips Academy, Andover; Berkshire Museum, Pittsfield; de Cordova and Dana Museum and Park, Lincoln; Fitchburg Art Museum; The Institute of Contemporary Art, Boston; Lawrence Art Museum, Williams College; Mead Art Building, Amherst College; The George Walter Vincent Smith Art Museum, Springfield; Smith College Museum of Art; Springfield Museum of Fine Arts; and Worcester Art



Museum.

The Massachusetts Association of Handicraft Groups, founded in 1945, includes the following affiliated organizations: Berkshire Hills Society of Arts and Crafts; Blockhouse of Boston; Boston Weavers' Guild; Boston Y.W.C.A. Workshops; Buckland Weavers; Craft Center of the Worcester Employment Society, Inc.; Deerfield Valley Art Association; Hampshire Hills Handicrafts, Inc.; Marblehead Arts Association; Melrose Guild of Arts and Crafts; New England Farm and Garden Association; Old Sturbridge Village; Plymouth Needlecraft Workers; Plymouth Pottery Guild; Saugus Arts and Crafts; Shelburne Falls Community Art Center; Society of Arts and Crafts, Boston; South Shore Arts and Crafts; Springfield Guild of Craftsmen; Women's Educational and Industrial Union; Worcester Guild of Artists and Craftsmen; Worcester Hookcrafters Guild; and Worcester Weavers' Guild.

Maryland weavers were represented by 44 textiles out of the 130 entries in various crafts selected by the jury for the first Maryland crafts exhibition sponsored by the Baltimore Museum of Art and shown for a month last spring in the museum's American gallery. The textiles were handsomely installed so that they could be observed without difficulty.

Basing selection on originality of design, as well as on good craftsmanship, the jury accepted about one-third of the entries, a high average for a juried show, according to museum officials. Sixty-five craftsmen, from 130 who submitted work, were represented, many with more than one entry. Because of the excellent quality of work the museum expected to purchase objects for its permanent collection of contemporary crafts. No

Maryland weavers, reading down. Suit material, Margaret Diehl; left, rug, Lois Winslow and Emily Walker, designed by Florence Hohman—right, lampshade material, Virginia Seabolt; honorable mention, drapery, Pauline Dutterer; left, transparent wool window drapery, Edith Cummings—right, white wool upholstery, Mrs. Philip N. Healy, both honorable mentions; wool coat material, Pauline Dutterer.

prizes were offered in this first museum exhibition and almost all of the work was for sale.

Honorable mentions in textiles were awarded to the following Baltimore weavers whose work is illustrated here:

Edith Cummings, window drapery of transparent wool, natural.

Mrs. Philip N. Healy, white wool upholstery, in broken twill, handspun in the grease, with dots of green Persian wool. Much of Mrs. Healy's work shows strong Swedish influence.

Virginia Seabolt, lampshade material, natural linen boucle warp and weft with pattern of white straw.

Among other weavers showing interesting work were:

Pauline Dutterer, handsome wool coat material, in large red and gray checks, with blended outlines, rather than sharp differentiation, and a well-designed drapery fabric of cotton and linen with burnt orange warp and weft in two shades of gray and green.

Emily Walker, smartly styled apparel fabric of off-white silk and wool, with narrow vertical stripes of black, woven diagonally, tartan shirting, and linen curtains in an 8-harness diamond weave.

Margaret Diehl, smart tweeds, in gray and green heather mixture, with a green silk thread used effectively for accent in one design, and green metallic and a single orange thread in another. She also showed summer coat material in rose of linen, wool, cotton, and rayon.

Mrs. F. W. Doolittle, novelty fabric of rust and blue, pineapple fiber.

Mrs. D. C. Wharton Smith, evening bag in black and gray with silver and gold metallic.

Ruth Albright, 4-harness drapery in wheat linen.

Martha Resh Knight, rug of strips of blue and beige cloth, colors cleverly blended.

Bertha L. Kundsten, runner in Norwegian pattern, of hand dyed yarns in soft colors.

Elise Harris Spencer, 8-ply cord rug, twill, in navy, red, brown, and green.

Jean Pirzio-Birsoli, belt of tapestry yarn and tied woven on inkle loom.

Loretta Resh, yellow twill in linen and cotton.

Lois Winslow and Emily Walker, rug, 4-harness design by Florence Hohman, black pattern, wool on cotton warp, woven on a 90" loom without seams. (Illustrated here).

Lois Winslow and Mary La Porte, white wool blanket in varied twills, designed by Mrs. Hohman.

Harold Resh, man's scarf in white wool.

Dorothy L. McConnell, drapery material in tones of red and rust with metallics.

Design in textiles was on the whole conservative, with most of them definitely in the usable class, not at all an undesirable recommendation for handweavers. Color was used effectively, but equally effective were the apparel fabrics and others in natural tones of various fibers, the use of which always presents a handweaver with a definite challenge. Yarns seemed to be chosen with the purpose of the fabric well in mind.

Members of the jury were: Paul V. Gardner, curator of ceramics at the Smithsonian Institution in Washington, D. C., Bertha Schaefer, decorator and gallery director of New York City, and Kathryn Wellman, director of arts and crafts at the Pennsylvania Hospital in Philadelphia.

It is to be hoped that the Baltimore Museum of Art will sponsor such an exhibition annually.

The new art museum in Fort Wayne, Indiana, is distinguished for having sponsored the first state-wide handloom weaving exhibition in the state in April. Walter H. McBride, director of the Fort Wayne Art School and Museum, deploring the low standards of design among hobbyists, conceived the idea of a state weaving competition as an initiatory effort to improve taste in Indiana, at least; it is hoped that this may prove to be a biennial affair. Here, as in some other sections of the country, there has been so much slavish copying of patterns and indiscriminate imitation of designs that most people have missed the fun of using their imagination to try out their *own* ideas in inventing weaves, combining yarns and colors to create cloth, while developing appreciation of good design.

Organizing a committee of experimental enthusiasts from the Fort Wayne Shuttlecrafters Guild and the Fort Wayne Art School's textile studio. Mr. McBride laid plans for the enterprise which met with such splendid cooperation that Fort Wayne has become a leading handicraft center in Indiana. Day and evening classes in design for weaving are being held at the Art School, and the Shuttlecrafters Guild meets monthly with special programs styled to help hobby weavers with design problems and with information about new trends and blends in yarns.

Sponsors of the exhibition were the Fort Wayne Shuttlecrafters Guild, Indiana State Weavers Guild, Fort Wayne Woman's Club, E. B. Taggart of Indianapolis, and the Sigma Eta fine arts sorority. Working on the committee with Mr. McBride were Mrs. Tennis Mahoney and Mrs. Helen West of the Shuttlecrafters Guild, and Mildred Fischer of the Fort Wayne Art School.

The judge of the exhibition was Azalea Thorpe, nationally know professional weaver, of the Cranbrook Academy of Art, Bloomfield Hills, Michigan, who also loaned a group of her own unusual handwoven fabrics for draperies, upholsteries, and suiting, including her experiments in piece dyeing. The competition was judged on the basis of originality, experimentation, craftsmanship, and suitability to purpose in handwoven materials. Entrance requirements called for original work, designed and executed by Indiana weavers within the past year. About 65 pieces were selected for this first exhibition, which was attractively arranged in the main galleries of the museum by Mr. McBride.

Separately displayed were some pieces completed this spring by staff members, but not entered in the competition: a 30" x 60" tapestry, "Reflected Birches," by Miss Fischer, as an experiment with salvage yarns of various materials; and two inlaid rag rugs by Mr. McBride, one of them composed of shapes suggesting flakes of giant pine tree bark. Further augmenting the show was a group of contemporary tapestries and color sketches by two of Finland's leading weaving artists, Eva Anttila and Martta Taipale.

The awards were as follows: Rugs —Helen Von Wahlde, Anderson, for use of color and freedom of design. Her rug was woven of brown cotton warp with buff wool weft, plain weave, inspired by a piece of deadwood which accompanied it. Honorable mention, Aden Clark, Fort Wayne, for a rag rug of slipcover material.

Towels — Marthann Alexander,

Edwin Rust, Memphis, Tennessee, Academy of Arts, and Daniel Defenbacher, director, Fort Worth, Texas, Art Association, judging woven textiles at the Dallas show.

Muncie, for use of color and its integration with inlay, a set of three linen towels designed on the loom with meandering line design in inlay, emphasis on closely related colors with yellow as a constant. Honorable mention, Mary Jo Lambert for a pink-and-gray-and-metallic laid-in linen towel.

Yardage—Elsie George, Bedford, experimentation with yarn spinning and dyeing, including use of good color and texture, in "old blue" wool with a plain weave and twill threading. Mrs. George also received the sweepstakes award. Honorable mention, Gertrude Hamaker, Indianapolis, for interesting texture and a nice hand, silk in plain weave with shantung weft.

Napery—Emily McCullough, Indianapolis, for textural contrast and color relationship, in a set of linen and cotton table mats, natural, in tabby weave. Honorable mention, Herbert Traub, Indianapolis, for restraint in use of metallics in a well-woven tablecloth in pale green linen, cotton, and silver metallic, plain weave.

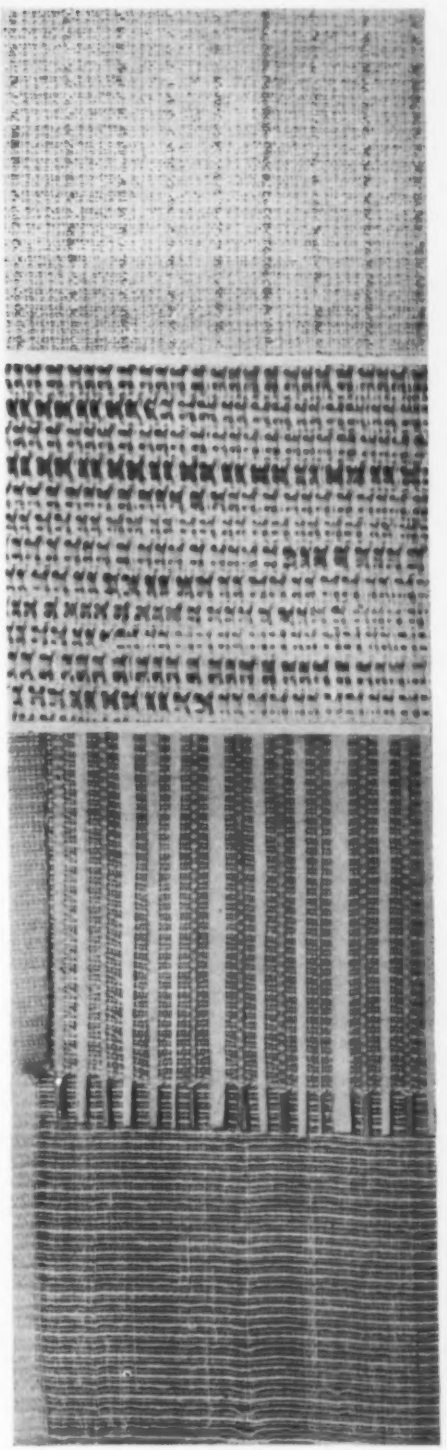
Miscellaneous — Mary Mahoney, Fort Wayne, excellent use of color, nice hand, and suitability to function; her piece was a wool plaid stole in various greens, yellow, and white, in plain weave with twill threading, with selvage also used as a decorative note. First honorable mention, Susan Sherburne, Mooresville, for excellence in use of color and fine weaving, apron of linen striped in chartreuse, blue, red, black, and turquoise, tabby weave. Second honorable mention, Alta De Remer, Fort Wayne, for good use of color and imagination, bag of plastic yardage, of blue and gray-green seeded nubby and metallic with black 24/2 warp.

(*Illustration on page* 57)

The Fourth Annual Texas Crafts Exhibition in Dallas, and the Third Texas State Ceramic and Textile Exhibition in San Antonio were both important in Texas handweaving. There was a definite improvement in the design, color, texture, and fiber combination in the weaving in general over that shown in previous years. The juries for both shows were serious in striving to keep the work shown of the highest quality. Nevertheless, very little work was submitted that was trite or merely copied traditional overshot designs.

There is still a wide field for ex-

(*Continued on page* 59)



Reading down. Cotton, rayon, and lurex drapery by Kay Maxham, San Antonio, in Fourth Annual Texas Crafts show at Dallas. Material for a screen, carpet warp and Johnson grass stalks, by Ronald Johnston, Denton, in Third Texas State show, San Antonio. Two mats by Rudolph Fuchs, North Texas State College, Denton. At top, mat with individual sisal strands woven in; below, Mexican palm leaves and cotton.

The Weavers' Guild of Greater Cincinnati

by ELSIE M. LEWIS

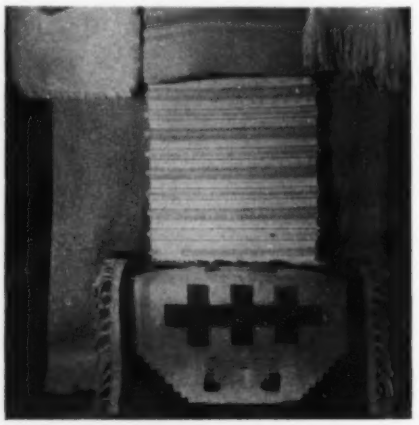
THE Weavers' Guild of Greater Cincinnati, Ohio, was organized four years ago by three well-qualified weavers, Mrs. Emily Buchwalter Levy, Mrs. Hazel Walters and Mrs. William Fitzgerald. The Guild now has an active membership of sixty-four. Seven meetings a year are planned with the desire to interest both the inexperienced and the advanced weaver, as both groups are well represented in the organization.

Several of the programs have proven so interesting and valuable that this type of meeting has been successfully repeated. "Everyday Problems in Weaving" and "Wool" are but two of the subjects which were presented informally in panel discussions by guild members.

Upholstery, warp 10/3 *pearl cotton, nubby rayon; weft of jute and nubby rayon wound together, threaded herringbone, tabby weave, Mrs. Charles Krueck.*

Once each year members bring small woven samples. A grab bag is filled with these samples and each member has a new piece of weaving to add to her collection. A sample is also contributed to the guild and added to the scrapbook. These books are available to the members on a loan basis and contain many variations in weaving patterns and techniques.

Usually two or three of the meetings are presented by well-known weaving authorities. The guild has been fortunate to have had Edward Taggart, Indianapolis; Miss Mildred Fischer, Fort Wayne; Miss Janie Ramsey, Berea; Mrs. Calvin Bright, Dayton, (recently returned from China where she taught weaving) and Mrs. Gladys Rogers Brophil, Baldwin, Michigan.



Examples of work by members of the Weaver's Guild of Greater Cincinnati.

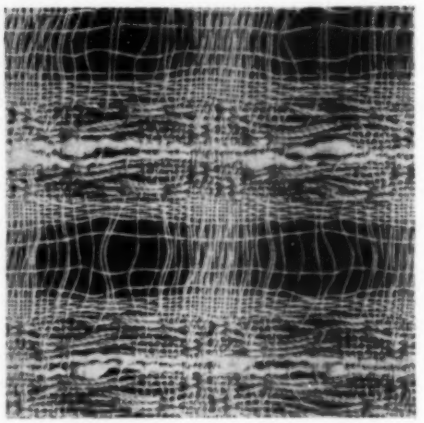
Workshops have been a stimulating experience to the guild members. Miss Florence Daniels, of Hull House, Chicago, conducted one a year ago and demonstrated many weaving variations which were helpful to both the beginner and advanced weaver. A more recent workshop was devoted to Weaving Initials, to Rose Path variations, with Berta Frey's book as a guide, and texture warps. Each section was presented by one of the guild members. A new member from Sweden demonstrated Swedish techniques. At both of these workshops members' looms were threaded in patterns to illustrate the various methods demonstrated.

Always a highlight in the year's activities is the Exhibition of the weaving done by the members. Last year three articles were exhibited by each person, her first piece, a recent piece, and her "masterpiece". Upholstery, yardage, household linens, baby blankets and rugs were all represented in the exhibit.

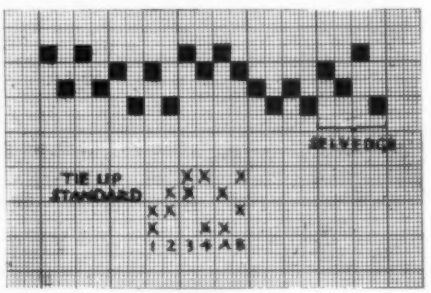
Shown at the left is work by the following guild members: top, a mat by Mrs. J. W. Bursk, (left), gray linen 40/2 warp, 30 threads to inch, and 6 strand yellow floss weft, matching napkins (not shown) in 4-harness Summer and Winter, with linen 20/2 warp and gray linen weft; mat by Mrs. Stewart Halbauer, 20/2 mercerized cotton warp, 30 threads to inch, 20/1 linen weft, Brooks bouquet bor-

(*Continued on page* 50)

Mrs. January, whose casement cloth is shown below, is a well-known weaver and teacher of Wilmington, Ohio. She is conducting summer classes at the Loomcraft Studio there.



Casement curtain by Mrs. Garnett January.



Threading draft, M's &O's, for the above.

Warp: 24/2 natural cotton. Wefts: 24/2, 10/2 mercerized cotton nubby

Reed: 18 dent, sleyed 8 single, 8 double, 8 single, 8 openings, repeated

Treadling: Treadle— 2, 4 alternately 8 shots 24/2
Treadle—1, 3 alternately 8 shots 10/2 color
Treadle—A, B alternately 4 shots 10/2 color
Treadle— 2, 4 alternately 2 shots cotton nubby
Treadle—A, B alternately 4 shots 10/2 color
Treadle— 1, 3 alternately 4 shots 10/2 color
Treadle— 2, 4 alternately 8 shots 24/2

Repeat, leaving space to make a square at the open dents. Canary yellow mercerized 10/2 used in the curtain.

Bird

(*Continued from page 7*)

finger manipulation and though this will seem a tedious procedure, it has at least one advantage. Where the tension is sufficient, the weft yarns grip the warp firmly and can be spaced well apart with the warps exposed between successive weft rows.

It is interesting to note that in spite of the consistent use of compact wefts at the ends of the warps, there is no example in this collection of patterning achieved with the weft. That such patterning can be accomplished, witness the twined Chilcat blankets of the Canadian West Coast. Instead, one finds patterning attained primarily by warp manipulation, with warps handled much in the same fashion as in ordinary gauze weaves.

The accompanying illustrations are planned to give some idea of the accomplishments within this simple framework. We were not, unfortunately, able to include examples in which supplementary warps create true warp float patterns.

In the present dull, faded state of the specimens it is difficult to judge correctly the use of color. Some natural brown and tawny cotton was used with the white for striped effects. Rarely a little blue dye can be detected; while the more frequent red is a pigment rubbed into the yarns before construction. In some pieces where the warp pairs were alternately transposed to the left and right to form a zigzag or chevron effect, contrasting colors could be held to opposite sides of the fabric showing through only at definitely planned points. In studying such examples, it is obvious that construction entailed actual counting not only of warps but also of weft rows.

When we examine the woven specimens, certain striking similarities to the twined fabrics are found. The method of attachment in the loom is identical and virtually all show the same initial construction, with the warps set up in the loom as pairs and a few compact rows of twining to fix or stabilize their ends. After this they were woven either singly or in pairs.

Granted that at this stage a heddle and shed rod might have been inserted, I doubt that this was done. There are examples in which woven areas are broken by transverse twined rows. One specimen has wefts woven for only part of the width of the fabric then twined for the balance of the distance, while the warps—woven for only part of their length—have the balance twined. In similar instances the woven area is so restricted that these have not been counted with the woven pieces, but have been classed as twined fabrics in which details are woven.

Another consistent feature of the twined fabrics, the use of short weft yarns tied off after each passage across the warps, is sometimes also found in weavings where every two picks of wefts are tied together at the side selvages.

Still another parallel between weaving and twining is the complete emphasis on the warps for patterning. These are either floated, generally over three and under one, or are lifted out of place and transposed as diagonal floats. In none of the specimens do we see the weft as the active patterning element.

In view of these various features, it is reasonable to believe that all of their weaving was accomplished by opening the shed solely with the fingers. For people accustomed to the finger work involved in twining this would pose no problem other than one of patience but as long as they had no knowledge of the heddle it is easy to understand why twining remained the preferred technique and why woven fabrics constitute such a small percentage of the total.

The techniques mentioned continued in use, with no major changes in frequency, for a period of 1300 years. As the more complex pieces seem to have been concentrated in the lower portions of the community refuse we can interpret this as indicative of a tendency towards simplification rather than elaboration during this interval. Obviously the original settlers brought with them a fully established tradition of textile construction and in view of the long subsequent record one which was adequate for their needs. When changes did occur, at about the 1200 B. C. level, there is evidence that a new group of people had arrived in the area bringing the knowledge of pottery, new domesticated plants, and other culturally distinct items. Although we secured only a few textiles of this time those of a slightly later date show an abrupt reversal in

(*Continued on page 50*)

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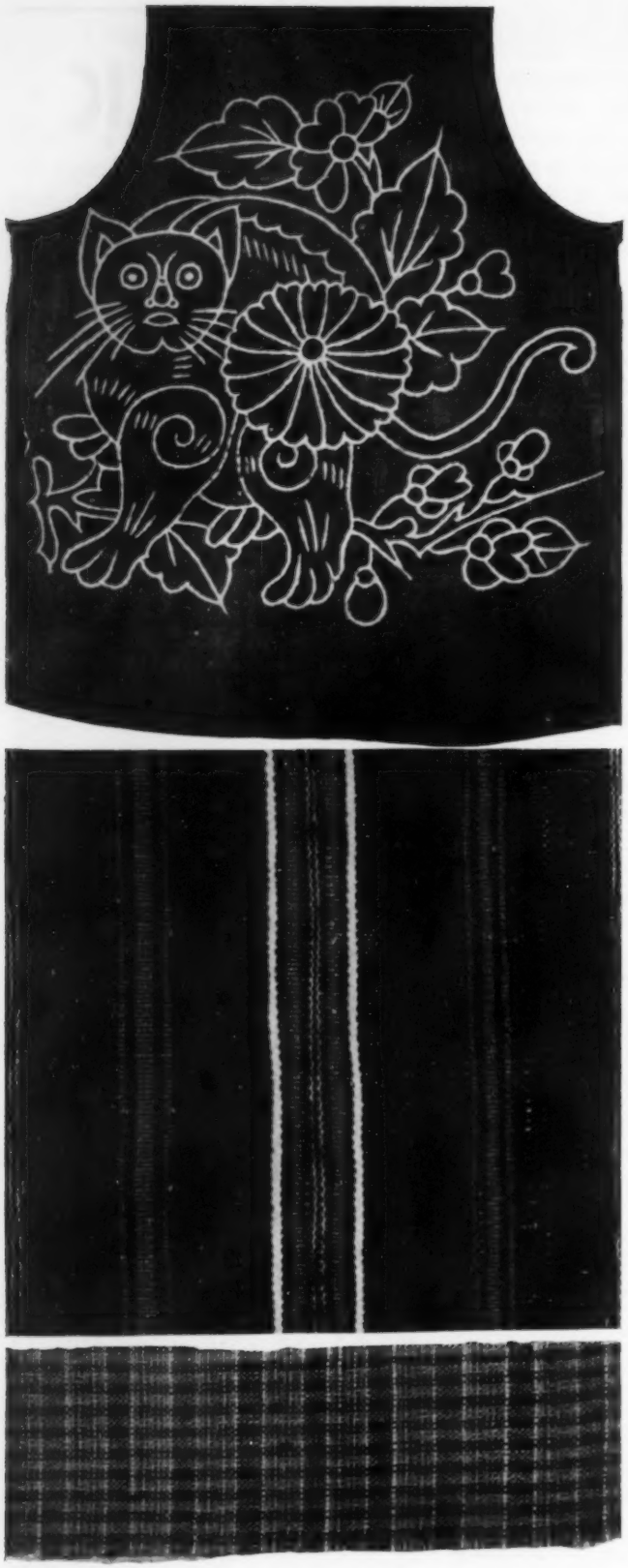


Reading down. Child's apron, plain cloth, cotton, resist-dyed, probably indigo. West China, 19th-20th century. Skirting, white and light blue pencil stripes on dark blue; undyed cotton and indigo-blue-dyed wool wefts on undyed linen warps; United States, late 18th or early 19th century. Cloth woven for slaves' garments, firmly woven plain weave, plain selvage at left. Cotton dyed light and dark blue (indigo), yellow, orange. U. S.

Cottons

(*Continued from page* 10)

cluding metallics, or beautifully painted or pounced and dyed with brilliant colors, took by storm people who had been wearing heavy woolen garments or elaborate silks and velvets, with garments constructed something like battleships. Walls had been hung with heavy tapestries, many dark in color, and windows curtained with the same.

No fashion, before or since, ever took such a hold on the French and English people. Because the Indian fabrics were so popular in France, but also so scarce and expensive, French artisans decided to try to reproduce designs by block printing, and met with success, so much success that the woolen, silk and velvet industries felt themselves threatened, and appealed to the government. In 1686 the French government passed laws requiring that all cottons or linens found in shops be destroyed. Cotton printing had developed in England also, with resulting opposition from other textile interests, and English prohibitory legislation was passed in 1700.

The legislation in France and England was just about as successful as such prohibitions by law have been anywhere. French and English women paid no attention to it, except to refrain from wearing their "calicoes" and other cottons in public. French law required that these garments be snatched from the wearers' backs. Government officials had cotton wall coverings, draperies and upholstery in their country houses, and smuggling cotton became big business.

In France the revocation of the Edict of Nantes, which had given religious freedom to Protestants, in 1685 drove thousands of Frenchmen engaged in textile production to England and other countries on the continent where they established cotton manufactures.

In the end, the French and English women won the battles with their governments. French restrictions were removed in 1759, but England did not give up until 1774.

The great demand for cottons continued and out of it came the invention of power machinery for spinning and weaving in England. As the cotton textile industry developed English mills began to send great shipments of cotton to India. The story of the invention of cotton textile machinery has been told many times. The important steps are the invention of the flying shuttle by Kaye in 1733, the spinning jenny by Hargreaves in 1764, the spinning frame by Arkwright in 1769, and the spinning mule by Crompton in 1779. With the invention of the power loom by Cartwright in 1785 the foundation was laid for the great English textile empire. These events in England had great repercussions in the United States, just emerging from the War of the Revolution as a separate nation.

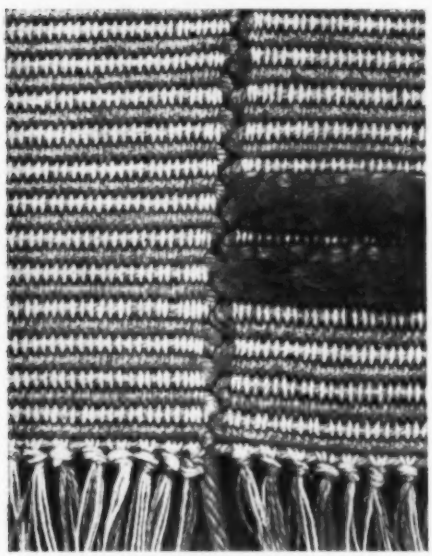
The first attempt at cotton cultivation by the American colonists is said to have been made in Virginia in 1621. Cotton from the Sea Islands off the Georgia coast was used by American colonists as early as 1642, and was raised about a century later from Sea Island seeds. Cotton seeds, probably from India, were brought in from England in the 17th century and production of cotton began in a rather haphazard fashion. It was dis-

(*Continued on page* 48)

(Continued from page 37)

in a small powder room with a black tile floor. The rug in wrapped weave was done in two tones of blue, with weft of white rug wool on a 1/2 linen warp. It was designed for use on a

Mrs. Zethraus at work.



Natural linen and jute, Ida Dean.

dark blue rubber tile floor. This was shown at the City of Paris Textile Exhibition, San Francisco, last year.

The rug by Ida Dean illustrated here was woven of natural linen and jute warp with a jute rope weft with the ghiordes knot used for the bars placed at irregular intervals throughout the rug, which is 9' x 12', woven in 3-foot strips. This rug, she says, is "content to stay on the floor and makes no demands on its owner either visually or otherwise." Miss Dean is instructor in weaving and design at the adult center of San Mateo, California, Junior College and executive secretary of the Professional Weavers Association.

Jean Wilson of Bellevue, Washington, is a weaver of some ten years' experience, who for about five years has been weaving drapery material, upholstery, rugs, and other items on order. She is the wife of Ron Wilson, professor of basic design in architecture at the University of Washington, Seattle. He also has an architectural practice and with him she has designed fabrics for some of his houses. Her work has been shown at the Seattle Museum of Art, the Henry Gallery of the University of Washington, and in group shows.

Mrs. Wilson's rugs were set 12 to the inch on a 1, 2, 3, 4 twill threading. For the dark rug she used a dark forest green carpet warp for warp and for weft a dusty brown jute and bright yellow sisal, in a combination of tabby weave and cut flossa knots. The light rug also has the dark green carpet warp for warp, with the texture and darker strip in medium green large rug roving and the flossa loops, uncut, placed casually.

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(*Continued from page* 46)

covered that seeds from tropical climates could not survive frosts so in the colonies cotton had to be planted annually. Through various mixtures of varieties American cotton developed into a kind which adhered more tightly to the boll than Asiatic fibers. Pulling it from the seeds was such a time consuming process, even with slave labor, that it was not considered a profitable crop.

The invention of the cotton gin by Eli Whitney in 1793 was the turning point in cotton culture in the United States. The great demand for cotton sent the English mills searching for raw materials and the southern United States found that they could sell all that they could raise. Consequently cotton became more important as an agricultural than as an industrial resource in the South, although some attempts were made to establish mills.

Cotton was first shipped to England in 1764 and small amounts followed, but of course all shipments ceased with the outbreak of the War of the Revolution. A cotton goods famine developed in the colonies during the war and interest in home manufacture was greatly stimulated. The first American cotton factory which was not, however, successful was built at Beverly, Massachusetts in 1787, and another factory for carding and spinning at Philadelphia in 1788. The real start of cotton manufacture in the United States began with the arrival of Samuel Slater from England. Slater, who had worked in English mills, set up a factory at Pawtucket, Rhode Island, building the machinery entirely from memory. The factory is still in existence. England had prohibited the export of all cotton machinery, as well as the emigration of any textile workers. Americans were making every effort to obtain knowledge of the coveted machinery.

In 1813, the first cotton mill in the South was built by Michael Schenck near Lincolnton, North Carolina, and so commenced the growth of an important yarn and thread industry in that area. Today, Jean W. Schenck, who is the great-great-great-great-grandson of Michael Schenck, is active as president of the Lily Mills Company of Shelby, North Carolina, the outgrowth of the original mill started in 1813.

The first power loom weaving industry was established in Lowell, Massachusetts, in 1813 when Francis Cabot Lowell, who had observed machinery in England, had machinery built from his memory of English equipment. The Lowell mill is still in existence. In the beginning power looms were not popular and were used only for the production of the coarsest materials both in England and America. The ring spinning frame was an American invention and was of immense importance for the development of the industry in the United States. It made possible the use of unskilled labor.

Cotton production, now America's greatest agricultural industry, has undergone great changes in the last 20 years. It is now raised in a belt extending clear across the United States which reaches as far north as southern Missouri. Boll weevil damage has been a great spur to research and varieties which mature earlier than older ones and have other advantages are now cultivated. Mechanical harvesting also is having a revolutionary effect, along with production in irrigated areas. While many varieties used to be planted indiscriminately today in the United States only about a dozen major ones are now cultivated in "single variety communities."

The English word *cotton* comes from the Arabic "katan" which originally was believed to have denoted flax. The term *linen* earlier was used for cotton as well as linen fabrics and even today cotton fiber is called *lint*. In earlier times such terms were used to describe

(*Continued on page* 51)

Tools

(*Continued from page 29*)

can be adjusted to many looms without difficulty.

Figure 6 is a model of a support for holding harness frames. A patient who can not sit at a loom may use this device to thread a pattern through the heddles, after which the harness frames are hung in their proper position in the loom. To make a support for harness frames for a 14″ or a 20″ loom, the following materials are required:

Two boards ½″ thick. One, 7″ x 20″ for the base, and one, 7″ x 7″ for the end piece which is fastened at right angles to the left end of the base. Also, five strips ¾″ square and 19½″ long, which are fastened, ¼″ apart, to the base board, and five strips, ¾″ square, spaced ¼″ apart and fastened to the right side of the end board, and meeting the strips on the base board. The harness frames, complete with heddles, are placed between the ¾″ square strips in the same position as they hang in the loom. Small rubber pins placed on the four corners on the bottom of the base board will keep this support from slipping when the patient is threading a pattern through the heddles. If the first ¾″ strip is fastened back from the front edge of the base board, about 1″, there will be a place for the reed (through which the warp ends have previously been drawn) to be clamped and held in place while the pattern is being threaded through the heddles.

A warping frame may be made from odd strips of pine from fruit boxes or crates. Drill holes for the dowels or pegs in the four strips used for the frame, and fasten them securely in place. If the frame is made with lap joints at the corners, and fastened with bolts and wing nuts, it can be easily be taken apart for storage. A screw eye on each end of the top bar provides for hanging the frame on the wall. If a small frame is made for use of bed patients, small rubber bumper pins on the underside of the four corners of the frame will keep it from slipping when used on a table, and will make it convenient for a bed patient to use. One or two screw eyes fastened on the bottom bar of the frame, through which the warp ends from the spools or cones are drawn, facilitate winding the warp.

Rusty reeds, and steel and wire heddles can be reconditioned by using a good rust remover and polishing with steel wool. Emery boards, such as are used in manicuring, are excellent to clean wires. The paper covered edges of the reed should be shellacked before the rust remover is used.

Small plain picture frames may be used to hold treadling directions. Remove the glass and insert a piece of sheet cork. The card on which the treadling directions are written is pinned to the cork and the frame is hung on the loom frame.

Corrugated boxes and cartons serve satisfactorily as containers for materials and supplies used in craft shops. A paper binding is pasted on all edges of the box. Lids for these containers, if desired, may be made from cardboard from larger boxes, cut to the proper size. Lids can be hinged to one edge with strong gummed tape. Covering the boxes or cartons with wallpaper, or with a plain heavy paper which can be decorated with finger painting or by other means, becomes another type of

(*Continued on page 51*)

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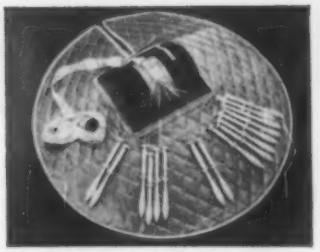

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(*Continued from page* 45)

the ratio of twining to weaving as well as weaving techniques, such as gauze and tapestry, which were unknown earlier. This may well indicate that the new arrivals also brought the knowledge of the heddle for obviously with this method of warp control twining could not compete with weaving as a satisfactory method of fabric construction. This would account for its rather rapid and complete disappearance among the cotton fabrics. The technique however survived in matting made from reeds and continued to be used for this purpose all through the later periods of elaborate textile development in Peru right up to the present.

One may be inclined to view the textile record in Peru as something apart from what was happening elsewhere in the world. But is this necessarily so? Studies of the distribution of the different species of cotton plants and their genetic relationship have prompted a theory that cotton as a domesticated plant was introduced from southern Asia. Although not proven this theory cannot be lightly dismissed. If valid it would mean that the textile craft of this early period had its origin in the Old World.

Final proof will probably depend more on future archaeological discoveries than on additional botanical evidence. What would be most helpful would be a comparable series of pre-heddle fabrics from the ancient cotton producing areas of northwestern India. Such a collection might help explain the curious parallels between the fabrics found in lake mud in Switzerland, dating back into the late Neolithic Period of Europe, and the ones from northern Peru.

(*Continued from page* 44)

der with narrow bands of silver; baby blanket in white wool, bands of rain drop pattern in blue and pink by Mrs. Bessie Leming. In center, on top, mat by Mrs. Chris Becker, ecru cotton warp, 15 threads to inch, background weft in turquoise with reeds, bands of turquoise rayon boucle, gold laminette, and white artificial straw; mat by Mrs. Richard Sparrow, 20/2 linen warp, 30 threads to inch, chartreuse, and weft of very heavy linen in citron with border in honeysuckle and leno. The wool mat in original tapestry design is by Miss Louise Worthington.

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(*Continued from page* 49)

occupational therapy project.

Boxes and cartons with partitioned spacing of various sizes which will accommodate small spools or large cones are often substituted for regular spool-holders. All edges are bound with paper tape so as to prevent threads from catching on them. The boxes may be covered to match the containers used for storage purposes.

Bobbins can be made from discarded curtain rods or plastic tubing which can be found in sizes to fit the spindle of the bobbin winder, with fiber washers cemented on each end. The washers may be obtained from hardware or plumbers' supply stores.

Since weaving is becoming more important in craft programs for children, making some of the equipment might prove interesting and come within the range of capacity of even quite small children. Repairing equipment would also seem to be a practical project both for occupational shops and for ingenious youngsters.

(*Continued from page* 48)

particular textiles rather than distinct fibers. The Arabic word was spelled in different ways, including "quttan" or "kutn" sometimes said to mean a "plant found in foreign lands."

Cotton is a vegetable fiber and almost pure cellulose. It is a hair attachment to the seed of some species of Gossypium belonging to the order of Malvaceae.

The cotton plant is a shrub reaching 4-6 feet and is indigenous to most tropical and sub-tropical countries. The plant needs warm and humid climate, sandy soil and the neighbourhood of large water areas. Apart from the cultivated cotton varieties a number of wild ones are known. These are distinguished by a red woolly coating on the testa of the seed.

The principal producing areas today are: Egypt, Southern United States, India, Brazil, West and South Coast of Africa, Peru, and the West Indies. Not to be forgotten are China and Russia which produce mainly for home consumption. In the United States, India, and Egypt, the plant is annual but in the tropics it is mostly perennial, reaching tree form. It is, however, usually treated as an annual in order to maintain quality and productivity.

The best fiber formerly was obtained along the eastern coast of the United States, including Florida, Georgia, and South Carolina. The highest quality fiber is now considered that grown in the Mississippi Delta and West Indies. The better grades of Indian and Egyptian grow in coastal regions. In China and Japan cultivation reaches north to the 41st parallel and in the European Black Sea area up to the 46th parallel.

Roughly speaking there are three types of cotton available:

Type 1: long, fine fibers with good luster and a staple length of 1-2½", such as Egyptian, Peruvian, and Sea Island types as grown in the southern United States, California, and the West Indian Islands. It is used for hosiery, fine broadcloth, mercerised cloth, and thread as well as other closely woven fabrics from yarns spun to fine counts.

Type 2: intermediate type, somewhat coarser and shorter, less lustrous with a staple length of ½-1 5/16", such as American Uplands. The bulk of the supply comes from North and South America. It is used for a large variety of large volume textiles.

Type 3: Short coarse fiber without any luster at all with a staple length of ⅜-1", including Indian and Asiatic types grown in India, China, Europe, southwest Asia, and southern Africa. It is used especially for blending, as with wool for carpets and blankets.

Sea Island. This is used for very fine yarns. Counts of 120s up to 300s are known to have been spun from these fibers and staples of 2⅜" have been observed. Sea Islands have to be combed (because only part of the fiber is long) and mixed with considerably shorter fiber. The yield per acre is relatively low but a high price compensates.

Egyptian Varieties. In Egypt, government regulations see to it that varieties are not mixed and the strains kept as pure as possible. Not only the fiber length, but more so the fiber fineness, is important in these varieties. Egyptian cottons are mainly used for fine, smooth finished ed fabrics with high luster. All Egyptian varieties are exceptionally suitable for mercerising and for sewing thread. The fiber is not as fine as Sea Island but superior to American Uplands for smoothness and luster. The nature of the fiber shows a definite relationship to Sea Island types but the deeper, sometimes brownish, color cannot be explained. Yarns from Egyptian cottons are more compact than equivalent counts made from American Uplands cotton.

(*Continued on page* 55)

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Frey

(*Continued from page* 11)

coverlet or a rag rug. Our styles today call for almost anything but a 20/2 cotton warp and so we must have other sizes of reeds. The past few years, the vogue has been for very coarse weaves and perhaps a 6-dent reed is used with some of the very heavy warps mixed with two or more fine yarns in a single dent. A good collection of reed sizes is a must, if we are to avoid a sameness in our weaving.

I am afraid I'm a bit perverse. When I was starting to weave, I wanted to be different, so I would not use a 15-dent reed at all. I used a 14 or a 16-dent. I did not own a 15-dent for several years. I don't recommend any such attitude in beginners today, but I do recommend a collection of reeds.

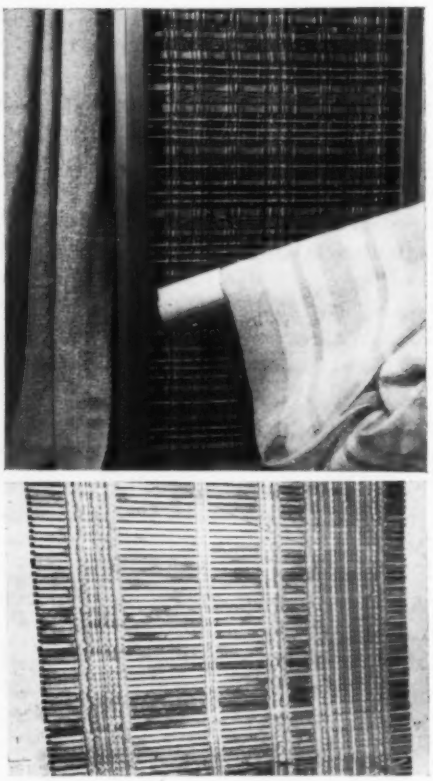
Some people like to use only a 12 or 15 and get the different spacings by varying the ends per dent. This again is a matter of personal opinion. I don't like it for some things, though for others it works very well. Often with an uneven denting, we get "reed marks." Sometimes these groupings will wash out but all fabrics are not going to be washed. And I find it very difficult to wash out reed marks if there are three or more ends in a dent.

The weight of yarn makes a difference too. If a fabric is to be used for drapery where it is to hang in lengthwise folds, a fabric woven "square" is not always as drapable as one where the warp is slightly heavier than the weft and is sleyed closer together than it would be if there were to be the same number of picks as ends.

With any discussion of sley, the kind of weave is very important. Given the same yarn—say 18/2 worsted—if sleyed at 16 ends and beaten very lightly to have 16 wefts per inch also, the resulting fabric is quite soft—almost sleazy. It would be used for a stole or scarf, possibly, but never for a dress or suit. Set the same yarn at 20 ends and with the same beat the tabby fabric will be stiffer than the twill. The twill will pack too closely unless great care is used. But the tabby fabric would make a dress material. Set the same yarn at 24 ends per inch and if it is woven in tabby, it will be almost impossible to get it "square" and the resulting cloth is much too stiff for a dress, but the twill would make a suit. And at 30 per inch, the same yarn in a twill weave would be a coat fabric.

Because there is so much variation, no hard and fast rules can be laid down. And what one person likes for a dress, another would like for a coat!! And that is where we hope that our guild problem is going to be a help to us all. We can look at a sample made with a given yarn and see how it looks when woven in tabby or twill and when sleyed at different spacings.

And if you don't belong to a guild? Well, I once made a plaid warp of "Woodpecker" and sleyed it at 20 ends per inch. After I wove a half yard of tabby, I wove ½ yard of twill. Then I changed the sley to 16 and did the same treadlings; after that I sleyed the same warp at 24 ends. By using the middle width first, it did not make too great a difference on my loom to change to a narrower or a wider weaving width. I would not like to weave several yards at 24 per inch when my warp was wound at 20, but for a sample length, it was not difficult. I have done the same thing with other yarns for my own convenience and then used these as a comparative standard to suggest the sley for other yarns.



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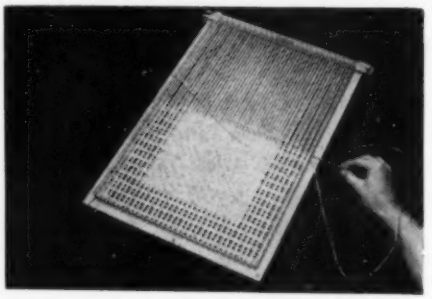

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Mexican

(*Continued from page 24*)

produces handwoven silk rebozos, and only in the color of magenta.

On the highway to Uruapan, the village of Paracho is noted for its dark blue Michoacán rebozos, in spite of the fact that Paracho makes most of the guitars for Mexico. The Michoacán rebozos are different from the other Mexican rebozos in that the design features a long white lengthwise stripe, and bits of colored yarn and even feathers sometimes adorn the intricate fringes.

To the south of Mexico City are the important resort cities of Cuernavaca, Taxco and Acupulco. Some handweaving can be seen in the shops and markets there, but none of the three is an important handweaving center. Taxco, of course, is the silversmithing capital of Mexico. One shop, near the Zocalo, features handweaving for sports clothes, and Elizabeth Anderson's shop, "El Alarcon" offers unusual embroidery and imaginative sportswear items. Acupulco, which is rapidly becoming the number one tourist destination in this hemisphere, has almost no craft activity. Jim Tillet does fine printing and painting on handwoven wool yardage, and there are retail outlets in Taxco and Cuernavaca, in addition to his Mexico City shop.

The little towns in the Toluca Valley, about 50 miles west of Mexico, D. F., are known as the Arts and Crafts Villages. The Indians in Ocoyoacac weave wool homespuns, sashes, rebozos and petates (floor mats) of palm and straw. Guadalupita is a tiny village of handweavers, and Tenancingo is famous for its handwoven rebozos. These towns are south of Toluca, off the main highway, and some are difficult to reach. The Indians are Otomis, and because the elevation of the valley is nearly 9,000 feet wool is the important weaving material. At the entrance to Toluca, the Museo de Arte Popular displays many kinds of craftwork done in the State of Mexico. The Friday market, in Toluca, is another big tourist objective, and the city is justly famous for its colorful hand-braided baskets.

Farther west, one enters the beautiful state of Michoacán, and the Lake Patzcuaro villages hold much of interest for the craftsman. The village with the intruiging name of Tzintzuntzan turns out pottery with a clear green glaze. There is a small museum in the town of Patzcuaro, and the markets are always busy and interesting. Patzcuaro and Uruapan (gateway to the volcano Paracutin) are the lacquer ware capitals of Mexico. In the center of the lake, the island of Janitzio is a picturesque village of weavers and fishermen. The steep cobblestone alleys are draped with great nets, and the odor of fish permeates the weaving and net-tying activity. At the lakeside village of Erongaricuaro, Mrs. Lena Gordon directs a group of weavers who make bolts of cotton yardage. In her villa, Mrs. Gordon blends the colors and supervises this little known group of handweavers.

Southeast of Guadalajara is the largest lake in Mexico, Lake Chapala. On its muddy and receding shore are the quaint art and craft towns of Jocotopec and Ajijic. Jocotopec, just a mile off the main highway, is full of friendly and capable weavers. Most of the weaving is the familiar serape, for which nubby wool yarn is handspun. It was here that I came upon the longest handloom I have ever seen. At least fourteen feet long, it was completely handmade, except for the metal reed and heddles. The work of the Ajijic Handweavers is done especially for the sports clothes that are sold in the shop. Neill James offers the tourist embroidery and handmade blouses.

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The museum, Arte Del Sur, in Guadalajara has a small collection of craftwork, and the manager, Antonio Perez, can direct you to Telas Domos and other handweaving shops in that city. However the craft interest in this area is centered in the many ceramic studios in the suburb of Tlaquepaque. The poorly designed pottery made there is very popular with most tourists; more interesting is the handmade glass factory.

San Miguel Allende, a charming town in the state of Guanajuato, boasts two art schools, both of which teach handweaving. Brita Sundholm, from Sweden, is the weaving instructor at the Instituto Allende. Students use the standard Mexican loom, and the carding, spinning and dyeing of wool yarns is done at the school. Weaving classes have begun to experiment with vegetable dyes obtained from local plants, and the school director, Stirling Dickinson, reports that the results have been very encouraging. The vegetable dye experiments being done at the Instituto Allende are unique in Mexico; originally all weavers used this method to obtain yarn color for their serapes, but chemical dyes from the corner farmacia have done away with this. The Instituto Allende occupies one of the finest art school buildings imaginable, and all phases of art and craftwork are taught. Mrs. Sundholm has woven many fine tapestries that are often on display at the school.

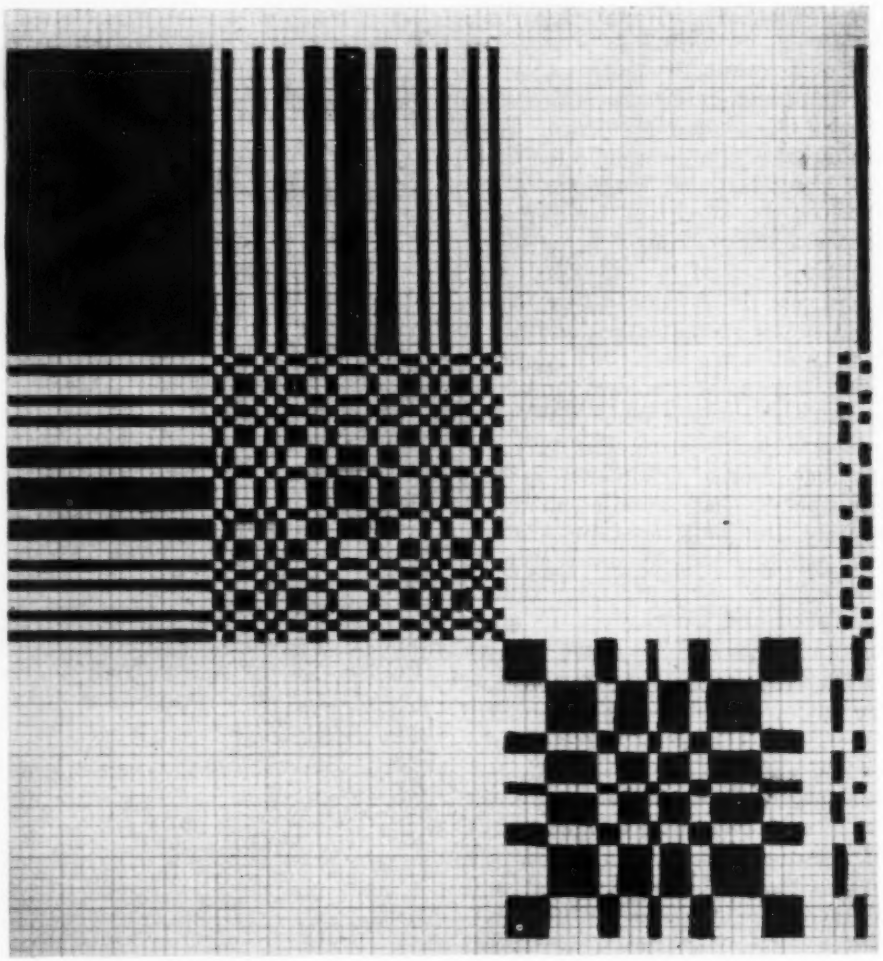
The Universidad de Bellas Artes, another San Miguel art school, is housed in an ancient convent building. The weaving teacher, Felix Perez, presides over a weaving room containing 25 looms, mostly two-harness type. Hand-spun wool, again, is the main weaving material, with thin white cotton used as warp.

El Serape Azteca, in the bustling city of Aguascalientes, is housed up over a turkish bath, both of which are difficult to find. Inocencio Herrera is the manager of the weaving shop which contains many looms and dye pots.

Weavers and weaving can be seen in Zacatecas, Durango, San Luis Potosí and Chihuahua, but the most important weaving center in northern Mexico is Saltillo, the capital of Coahuila. Less than 200 miles from the U. S. border, Saltillo is situated on the great central plateau, and the weavers (almost all men) produce great numbers of serapes. The looms are enormous old wooden structures at which the weaver stands or leans; many are of the fly-shuttle type employing ancient hand-carved shuttles and leather thongs. I have seen handlooms in Saltillo so large that wooden braces were run from the top of the loom to support the roof.

It is easier to see handweaving in Mexico than to see it being done. Handweaving is exhibited and sold in many markets throughout the country, but the weavers and their looms (telares de mano) are usually off the beaten path. Mexico is an extremely interesting and beautiful country, as well as being very inexpensive to visit, and any craftsman can find much of interest there in the art and folklore of handweaving.

Mr. and Mrs. Hewitt of Houston, Texas, are again spending the summer in Mexico. His article reflects last summer's experience. He is a weaver and interior designer, and last year taught the handweaving classes in the University of Houston.



Designs

(*Continued from page 21*)

the draft as given and this would suggest a minimum of 58 threads in the block which would be much too great an overshot. Of course it might have been taken care of by an occasional "tie-down" so that the effect was of a large square, but actually shorter skips made the real overshot. Evidently the treadling directions (if that is what they are) left a lot to the good judgment and intelligence of the weaver. Miss Frey does not consider her diagram "authentic."

Has any reader of HANDWEAVER & CRAFTSMAN discovered this pattern? If so, perhaps she will be good enough to send in the original drafts so that they may be reproduced in the magazine.

Mrs. Riswold, assistant professor of arts at the University of California, Los Angeles, teaches the classes in handweaving. She is a graduate of U. C. L. A. who has had additional work at the California School of Arts and Crafts, Oakland, the University of Southern California, Los Angeles, and at Chouinard Art Institute. Her work is widely exhibited.

(*Continued from page* 51)

Pima and "SXP" in Southern U. S. Egyptian strains grown in the United States range in staple from 1½ to 1⅝". The relatively small crop was originally grown especially for the tire industry but is now used for dress fabrics and specialties. It is normally not very profitable for the growers.

Other Long Staple Cottons. These include smooth and rough Peruvian and Tanguis. The lint is slightly shorter and rather coarse. In general, it is used for the same purposes as long staple Uplands. Ishan cotton grown in Nigeria belongs to the Peruvian groups. This type is believed to be a transitional form between tree and annual type Sea Island. The lint is rather short and coarse. Into this group also belongs a variety growing into trees 15-20 feet high producing a short, coarse fiber with a staple length of up to 1¼". Aspero of Peru, Vergara of Central Colombia and Criollo of Minas Geras, Brazil, belong in this group.

Upland Cottons. Varieties and strains of Uplands are mostly found in the southern United States, Central and South America, Turkestan, Russia, Uganda, South and West Africa, Queensland, Mesopotamia, in parts of China, India and Manchuria. The majority of cotton cultivated in the world belongs to his species of Gossypium Hirsutum. The lint length varies from ½-1 5/16". Most American cottons come into this group, staples ranging from ¾-1⅜" and diameters from 15-22 micra. More Uplands is grown in the "irrigated" cotton region, which includes Arizona, California, and New Mexico. The bulk of these range in lengths from 1-1 7/32". The yield per acre is extremely high when compared with the yield of similar types grown under rain growing conditions. Irrigated cotton, however, is inferior because the staple is irregular and often weaker. It also makes more waste during manufacture. Uplands are also grown in Mexico. The Argentine cotton industry is founded on Uplands and strains thereof.

Short Staple Cottons. The majority of commercial cottons of India and China are short coarse, "Old World types." Similar strains are widely distributed in India, Malaya, South China, Abyssinia, Sudan, Turkey, Iran and Iraq. The staple length varies from ⅜-⅞" and can be spun only up to 16s.

The number of cultivated varieties and strains is already infinite and is still growing through systematic breeding and cross breeding. On top of all this there are innumerable varieties and forms of wild growing cottons.

Grading. The enormous variety, the difference in soil, climatic condition and the effect of ginning make it essential to grade cotton in order to determine classification and uses. Standard samples are established for each of the grades. The grades for American Uplands are:

1, Middling Fair; 2, Strict Good Middling; 3, Good Middling; 4, Strict Middling; 5, Middling; 6, Strict Low Middling; 7, Low Middling; 8, Strict Good Ordinary; 9, Good Ordinary.

These grades usually cover almost all white cottons. "Strict" denotes half grades for which samples are NOT established. The basic grade is "Middling" and all market quotations are based on this grade, with premiums

(*Continued on page* 60)

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Kay Geary's interpretation of Marta Page's Fledermaus shortie.

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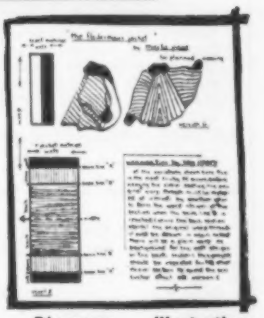
The City of Paris (Rotunda Gallery).



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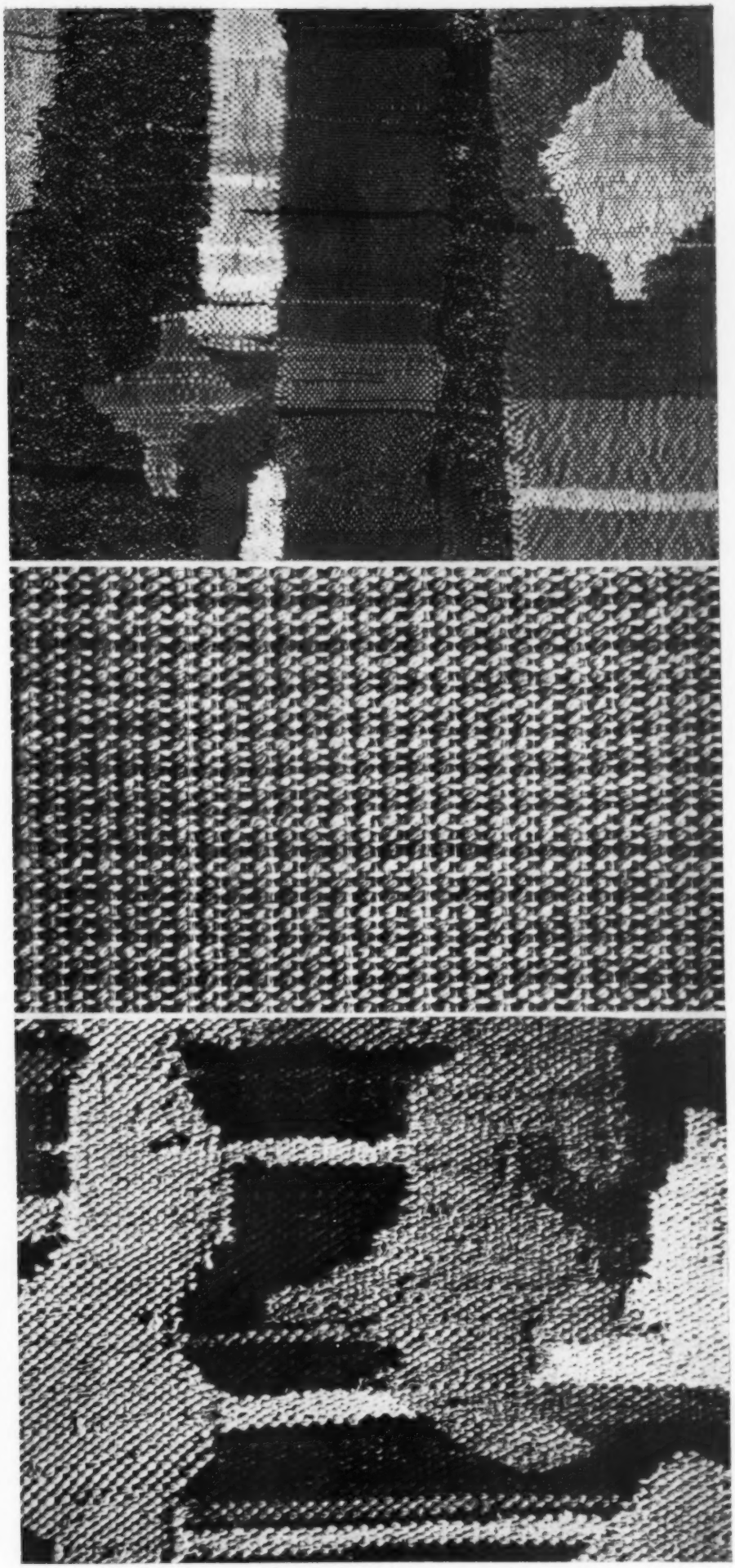
News of Weavers & Weavers' Guilds

Interest in handweaving is growing rapidly in Florida, according to reports from local groups at semi-annual convention of *Tropical Weavers of Florida*, Clearwater, April 4-5. Mrs. Pearl Bland, Tampa, president of Hillsborough Weavers and newly elected president of the state organization, reported great interest in the weaving school at Tampa, with a long waiting list. The Orlando Weavers, Mrs. L. B. Tucker, president, have been conducting workshops in spinning, weaving, dyeing, and commercial phases of weaving, which have been most successful. The Orlando Chamber of Commerce send many winter visitors to the group who either want to learn to weave or to meet Florida weavers. Pinellas weavers, Mrs. Ada Williams reported, sponsored a week's course on how to gather, prepare, and weave with native materials such as cocoanut fronds, pine needles, palmetto, and native grasses, including field trip. More than 100 weavers in Pinellas group and its monthly bulletin, containing drafts, patterns, and other information, is extremely popular. A comprehensive state-wide exhibit was part of the program. Mrs. Robenia Myrer Hendrich, Boston, who has a winter studio in Naples, discussed contemporary weaving and the importance of experimenting and developing new designs. Officers elected were: Mrs. Bland, president; H. C. Darlington, Clearwater, vice-president; Florence Magilton, Orlando, recording secretary; Mrs. R. W. Truax, Tampa, corresponding secretary; Mrs. R. E. Parker, Cocoa, treasurer. Mrs. Bland is now traveling over the state in the interest of the state organization. Fall convention in West Palm Beach November 8.

Officers, Tropical Weavers of Florida. Left to right. Mrs. Bland, president; Mr. Darlington, vice-president; Miss Magilton, recording secretary; Mrs. Truax, corresponding secretary; Mrs. Parker, treasurer.



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Shown at the first state-wide hand-weaving exhibition, sponsored by the Fort Wayne, Indiana, art museum. Reading down. Detail — Tapestry. "Reflected birches" by Mildred Fischer. Wool stole by Mary Mahoney, green-chartreuse and white wool, first award in miscellaneous class. Laid in rag rug by Walter H. McBride. Cotton rags. Story page 42.

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(*Continued from page* 19)

that will form a border. After returning with the tabby from left to right, change the shed and count ten warp threads on the upper part of the shed, insert the red design threads, going from right to left, in the shed and under ten warp threads continuing to the left, bringing the red thread up and out of the shed leaving about an inch of red thread at the right. With this red inch of thread, take it to the left, up and over the top warp thread and its neighboring warp thread on the lower shed, right down to the very underside of the bookmark. From now on this is the way we will begin each new thread, and we will end each thread the same way, always at the right-hand side of the work.

After the pattern weft is in place, put the white linen weft (a continuation of the same thread already used for the preceding inch), in the shed, beat gently, and change the shed ready for the return row. First take the red thread and gently pull it to the right, enough to "open the warp door," showing you where that thread will enter the shed. From this point start counting the ten warp threads under which the red thread will return to its starting point. Follow this with its tabby binder, beat gently, and change the shed. Repeat these last two rows again, and this completes the first row of squares on the design. It will be noticed that the next row starts one block to the right of the row before, also going on one square further. To progress from left to right with the design thread, we do it on the new shed by taking the pattern thread UNDER the next warp thread to the right, and OVER the second top warp thread, and then going from right to left proceed in the usual manner, going as far as the graph paper design designates. With this much information the red tub may be woven and the red thread ended. A new thread of green may be started, the trunk of the tree and the tree proper may be woven up to its broadest part, nine squares (18 threads) wide. On the next row we see that the tree narrows, so we must understand the final step in following a squared design. To progress from the right towards the left in the design, we must prepare for it on the previous row, as follows: after putting in the pattern color, and before putting in the white tabby binder of the last row before the change is to be made, bring the pattern thread up and over the top warp thread to the left, under the second top warp thread, and to the top again. This is now in the proper position for the following pattern row. In using several colors, each color and shade is begun and ended in this same manner, progressing from right to left, and from left to right in just this same way. Between the first bookmark and the second, insert a tongue depressor in the 1-3 shed and a second one in the 2-4 shed, if you are using a 4-harness loom and with the next shed start the weaving of the second bookmark.

If mounted on a card with a cheery greeting or an appropriate verse, these bookmarks may become a little gift or a table favor. I have found them most useful throughout the year as a greeting for shut-in friends, for thank-you notes, or for special messages at holiday time.

There are many kinds of laid-in, too many to more than just mention here, but I will mention a few and the places where you may find directions for weaving these fascinating techniques. We have all heard of Swedish dukagang, and many have woven it, but did you know there are several ways of doing it? There is Italian laid-in, and Russian, French, Guatemalan, Pervuvian, and Greek, with variations on each.

These techniques can be found in various publications:

Notes on Weaving Techniques, Florence E. House, New York, 1949.

American and European Hand Weaving, Revised, Helen Louise Allen, Wisconsin 1939. Out of print.

I Vavstolen Del II, Anna Skeri-Mattsson and Ingrid Osvuld, Sweden 1945.

Scandinavian Art Weaving VI, Elmer Wallace Hickman, Pennsylvania, 1948.

Seven Projects in Rosepath, Berta Frey, New York, 1948.

Loom Music, Mary Sandin and Ethel Henderson.

Weavers Quarterly, Kate Van Cleve. Out of print.

Shuttle-Craft Bulletin, Mary M. Atwater, through 1949; Harriet Douglas Tidball, current.

(*Continued from page* 43)

perimentation with native materials. Little has been done and there is so much to work with.

Outside of the native materials, weavers in Texas are using many types of yarns and fibers. It is naturally true that many of the weavers are becoming so intrigued with the new fibers and colors, that not enough restraint is used in the combinations. However, as the craft becomes more mature in the state, a more sensitive choice of sizes, textures, fibers, and colors will be made, and there will be a better relationship between the material and its use.

The jury for the Dallas show consisted of Daniel Defenbacher, director of the Fort Worth Art Association, and Edwin Rust, director of the Memphis Academy of Arts, Memphis, Tennessee. The jury members in the San Antonio show were Humberto Arellano Garza, interior designer and folk craft expert, Monterrey, Mexico; Sadie Irvine, Newcomb College, Tulane University, New Orleans, Louisiana; and Rudolph Fuchs, associate professor of art at North Texas State College.

The only prize for weaving in the Dallas Show was awarded to Rudolph Fuchs for a group of four pieces. One was a large banquet cloth in plain weave done in the natural colors of five kinds of linen. The other three were experimental mats using materials such as fine cottons, linen, sisal, acetate, jute, and palm leaves from Mexico.

San Antonio awards were: first, Doris Coulter, brown drapery material; equal awards to Rena Houston and Allan Hill, drapery material of rayon, wool, and cotton; Estella Henkel, black wool and silver stole; Garcie Schoolfield, delicate evening jacket material; Ronald Johnston, screen of natural carpet warp and Johnson grass stalks; Blanche Hardt, lace weave banquet cloth; Meda Parker Johnston, place mats, bamboo strips, various textured warps.

The exhibitions were held at the Dallas Museum of Fine Arts and the Witte Memorial Museum, San Antonio.

Both exhibitions were well planned and well presented. Much praise and credit go to the members of the Dallas Crafts Guild, and the Craft Guild of San Antonio. Groups that show so much genuine interest in and so much enthusiasm for a craft will make the craft increasingly popular in their own communities and throughout the state. — *Rudolph Fuchs.*

Massachusetts House Workshop; Original Massachusetts House, 1718.

Maine's Massachusetts House Workshop at Lincolnville, is celebrating its third birthday with an extensive exhibition program which opened June 2 and will continue through October 12. (Exhibitions are listed on the calendar page.) Its most ambitious undertaking, the second all-New England craft festival will be held from July 14 to 19, this time in the galleries instead of outdoors as was done last year. Last year's festival was the first of its kind to attract work from all six New England states. Built in 1948 to provide an outlet for the work of American craftsmen, the Workshop displays a wide variety of crafts from New England and elsewhere.

Right across the highway from the Massaschusetts House Workshop, stands Maine's original Massachusetts House, built in 1718 when the present State of Maine was part of the Massachusetts Colony. The old house, all trace of its original builder lost, was restored in 1939 by Miss Rachel E. Obershaw, builder and director of the Massachusetts House Workshop, and Miss Hester R. Hoffman. This summer for the first time it will be open to the public to take care of some of the overflow from its modern, larger replica.

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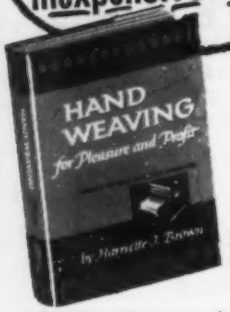

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(*Continued from page* 55)

paid for better grade and allowance being made for lower grades. Grade names used for other than white grades are descriptive but above grades are the basis for all prices in Uplands. Words like "tinged," "spotted," or "strained" are also used and are descriptive of the grades and self-explanatory. So are terms like "musty," "sandy," "leafy." "Blush" means good gloss, full-bodied and well-ginned and is a description often encountered. "Green" means early picked cotton that is not quite ripened, containing a great deal of moisture and therefore, as a rule, unsuitable for spinning.

The "grade" is composed of 3 factors: A—color, hue, brilliance, chroma; B—foreign matter, such as parts of the plant or burrs, but not metal, stones or similar objects; C—Preparation. Maintenance of normal fiber length, regularity of ginning, nappiness.

The U. S. Department of Agriculture sets up 32 universal standard grades for Uplands.

Apart from these there are innumerable intermediate grades. American-Egyptian varieties, Pima and SXP are designated by the numerals 1-5. Half grades are shown by ½s, with the lowest number representing the best grade.

Sea Island cottons are so different from the others that special grades are necessary. There are 6 full grades designated by the numerals 1-6 and half grades, the lowest numbers designating the best grades. Here again standard samples are established.

The cotton buyer has, apart from grades, other points to consider such as, length of fiber, pliability, cling, evenness, cleanliness and nappiness, among others.

No two fibers are alike. Each differs in fineness, length, strength and other characteristics. There are differences between fibers grown from the same seed in different locations and in same location in different years. Since uniformity is one of the most desirable qualities in spinning, buyers always check for it and include uniformity in their classification.

Textile Fibers. By J. M. Matthews. 5th edition, edited by H. R. Mausberger. The Heritage of Cotton. By M. D. C. Crawford. Out of print.

Cotton from Field to Fabric. The National Cotton Council. 5th edition. Pamphlets issued by the Textile Information Service and The National Cotton Council of America.

Plants, Man and Life. By Edgar Anderson. For the origin of cotton.

The second article in this series will include a discussion of cotton spinning and cotton yarns.

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WEAVER'S BOOKSHELF

The books reviewed in the following pages are those Handweaver & Craftsman believes will be of value to weavers both in their own craft and in related fields which are of importance to them. Many of the reference books could be profitably purchased for guild libraries.

Early American Furniture

Joseph Downs, the author of this unique book, is the curator of the Winterthur Museum at Wilmington, Delaware, and was for twenty years the curator of the American Wing of the Metropolitan Museum in New York. He has selected from the fabulous collection of American furniture at Winterthur some 400 examples of Queen Anne and Chippendale pieces. The museum collection consists of more than 4,000 pieces and an inspection trip of its 100 rooms requires an entire day.

Throughout the book the larger pieces are shown one to a page while the smaller pieces are shown two or three to a page. Facing page descriptions, including place of origin, approximate date of construction, materials used, maker and when known, the original owner. Also included are interesting quotations from contemporary wills and inventories. Ten of the rooms are shown in full color photographs, each with an accompanying running comment.

In the introduction the author gives the historic and political background of the period with special attention given to the eastern seaboard craftsmen who produced the furniture in this period, the golden age of living, leisure and taste, viewed from the standpoint of those *doing* the living. He points out the various foreign (to England) decorative details which were grafted on to the British design and used as "proof of the sophisticated tastes of a gentleman returned from the Grand Tour." The center of this better life, both in creation and appreciation, was Boston. John Adams, in 1774, on his first visit to New York wrote, "I have not seen one real gentleman, one well bred man, since I came to town." One wonders what his reactions would be to our present day New Yorkers. Before the revolution Philadelphia led all the other colonial towns in weaving and wood working and was the center of furniture making.

The owner of the collection, Henry Francis du Pont, has written a very personal foreword in which he gives the inspiration for his idea and tells of the pleasures of collecting, especially if one does not need to consider the price. To anyone interested in American furniture of the Queen Anne and Chippendale periods this is undoubtedly one of the most beautiful and comprehensive books ever produced on the subject.

American Furniture, Queen Anne and Chippendale Periods in the Henry Francis du Pont Winterthur Museum. Edited by Joseph Downs. The Macmillan Company, New York. 9 x 12, 400 illustrations, unpaginated. $17.50

Two Harness Weaving

Without reservations, *Handweaver & Craftsman* can recommend Harriette J. Brown's "Hand Weaving for Pleasure and Profit" for weavers of all stages of experience, but especially for those people who are planning to weave and for beginning weavers who must work without the help of a good teacher. It should be read carefully, and kept close at hand, because this book has more answers to puzzling problems than can be found in any other one volume. Subtitled "A Guide to Two Harness Weaving," its value is by no means limited to weavers who use two-harness looms. Its basic information will help all weavers and will stimulate the beginner on a two-harness loom to go ahead to more ambitious projects.

Mrs. Brown has the gift of writing

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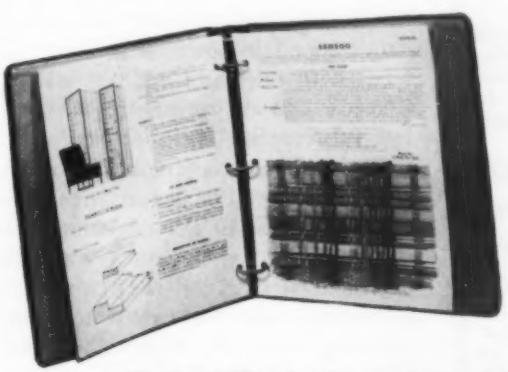

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(*Continued from page* 61)

simply and clearly about complicated procedures and of presenting the fundamental reasons for those procedures. She describes the steps in learning to weave in logical order, with text, diagrams, and well coordinated illustrations. Diagrams by Craig Kavafes are excellent and definitions simple and exact with the exception of that for the counterbalanced loom.

Everyone around *Handweaver & Craftsman* who had a pre-view of the book was very enthusiastic. Berta Frey, New York weaver and teacher, who has never felt that it was a good idea for beginners to read a book before starting to weave, said that, after reading this one, she had changed her mind completely. "Of course it is written for two harness weaving, an approach which rather simplifies things, but Mrs. Brown gives hints enough to make one want to go on to bigger and better things. It really is a splendid book and well put together. The little gnomes in the illustrations are interesting as well as instructive. I like the idea of showing what causes some of the common mistakes. Chapter 8—'Sundry Notes and the Correction of Errors'—is valuable for any and all weavers on all types of looms."

Mrs. Brown's book grew out of her unsuccessful search for a manual that would provide a novice with some of the detailed answers he needed when the teacher was not near. Most of the books she consulted were either too brief or too advanced. She wrote "Hand Weaving" for everyone who would like to learn to weave but she wanted especially to produce a book for those beginners who were too distant from craft centers to go to classes regularly or who were handicapped in some other way, yet who, with adequate written instructions, would enjoy learning this delightful, creative craft.

She outlines the important points as follows: "To begin with, you probably want to get a general idea of how weaving is done; what can be achieved with it; what equipment is needed; and the extent to which weaving can be followed." Mrs. Brown covers these clearly and comprehensively.

There is an excellent explanation of the loom and its parts, from which one could doubtless build a loom; chapters on threads and color; preparing the warp; and weaving techniques. One on special details includes fringes, knots, drafts, and pictured patterns. There is an excellent bibliography, an appendix with a table of yarn sizes and yardages and a glossary, and a well-prepared index.

Mrs. Brown stresses the "pleasure" of weaving, and the need for an unhurried approach on the part of the student. "The finest yarns and fabrics are made today, as they always were, by those whose time and effort was of less concern than the quality and beauty of the things they produce. Care and patience are necessary adjuncts in the details that attend the completion of any fine product."

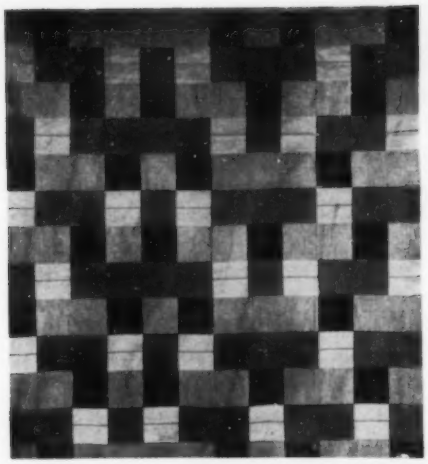
Mrs. Brown is a native New Yorker, who learned to weave here at the Riverside Church some 14 years ago under the direction of Mrs. Vera P. Jessup. She later, as a volunteer, taught beginners there for two years. She has traveled intermittently from Quebec to North Carolina, visiting weaving and craft centers, an interest she follows everywhere she goes and which extends to all branches of the craft.

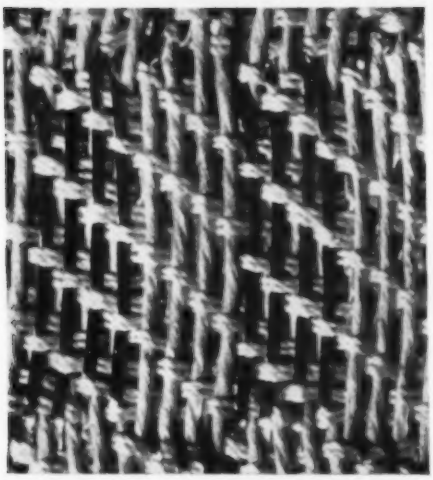
Hand Weaving for Pleasure and Profit by Harriette J. Brown. Harper & Brothers, New York. 6 by 9¼, 273 pp, 185 illustrations. Cloth $4.50.

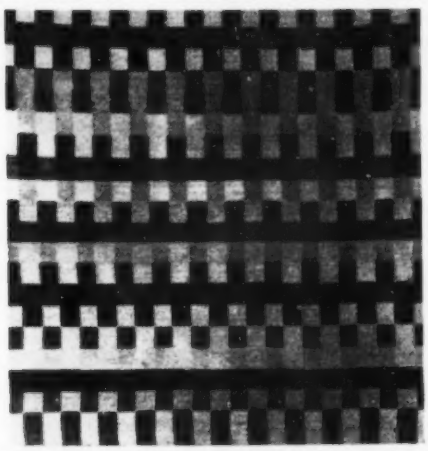
Textile Picturebook

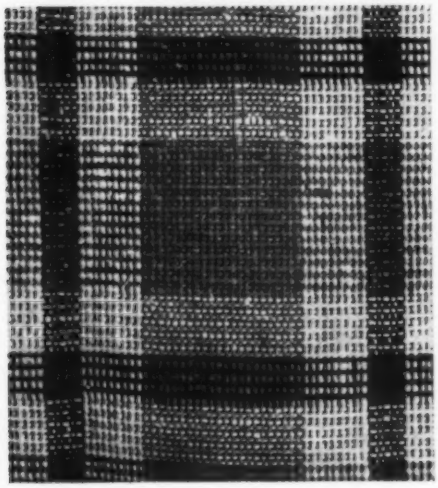
This handbook on the various textile handicrafts, although the text is in Swedish, is so profusely illustrated that even one unable to read the language, will undoubtedly enjoy the numerous excellent reproductions, some of which are in full color. Close-up photographs show the wool before it left the sheep, the various types of yarns, the finished weaving, and finally the material is shown in its surroundings. Also shown is a great variety of woven napkins, rugs, mats and upholstery materials, on which the creative mind and the trained hand are always very much in evidence. Several American sources are represented including Knoll Associate, Chicago Institute of Design, Dorothy Leibes Studio and the Cranbrook Academy, and there are also examples from Scotland and Britain

(*Continued on page* 64)









Bauhaus Design

In looking through this 1952 edition of *Bauhaus* 1919-1928, one is struck by the fact that the weaving examples shown are among the few designs which, a quarter of a century later, are not definitely dated. This may be because the weaving courses were among the more serious efforts of the school. While Bauhaus textiles originated in improvisation with materials, undertaken "amateurishly and playfully," as Anni Albers, the director, points out, with no reference to practical considerations and little emphasis on technique, as the textiles began to attract interest, serious attention was given to problems of production, and a systematic training in the mechanics of weaving was introduced, with definite disciplinary effect.

Then came an almost entire transition from hand to machine production, with handwork confined to the laboratory and the acceptance of the theory that the handweaver should confine his effort to designing for machinery—too much of a limitation, it would seem, to place on the effort of any creative artist regardless of his chosen medium.

In the beginning, experiment with materials had been considered all important, and technique was acquired as needed. This freedom of approach, Mrs. Albers believes, is worth retaining for every novice. In weaving, as in all other crafts, the Bauhaus rejected "even to its foundations," what previously had existed, and any reconstruction in the confusion of post World War I Europe, it was believed, had to be completely experimental. The objective of the school was to bring the artists and craftsmen again into a close working relationship with the community and to integrate their creative ability with

(*Continued on page* 64)

Textiles by Anni Albers. From the top down. Tapestry, red and yellow silk, 1927. *One of Mrs. Albers' recent designs. Shown at the Museum of Modern Art.* 1946. *Woven rug,* 1927. *Bedspread, linen and cotton in navy, red, and natural, for the new Graduate Center, Harvard University. Shown in Third Biennial of Contemporary Textiles and Ceramics, Cranbrook Academy of Art, and purchased by the Cranbrook Museum for its permanent collection.* 1951.

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Picture Book

(*Continued from page 62*)

To most of us, much of the material in this handbook will be quite refreshingly different and should be of extreme value to anyone desiring to know better the present day Swedish textiles.

Textil Bilderbok by Astrid Sampe-Hultberg and Vera Diurson, Published in Sweden. American distribution, Bonniers, New York. 162 pages. 7½ by 7½. Paper $4.15, Boards $5.00

Cross Stitch

This interesting source book on cross stitch patterns has a wealth of inspirational material, both in design and in the fresh color schemes, for weavers interested in composing these traditional units into an appropriate pattern. The designs have been done on graph paper. They are most accurately and beautifully done in full color and are based on, or adapted from, old samplers in the Röhs Museum in Gothenburg, Sweden. Most of the designs are identified as to country of origin and include besides Swedish, numerous English, Italian, and German patterns. The most color schemes are brown and light bluish green, with details in light blue, white, pink, yellow, neutral brown, and greenish yellow.

This book should fill a long felt need for any handweavers who may desire to incorporate traditional cross stitch designs in their work, those doing laid-in work, or students in tapestry weaving.

Cross Stitch Patterns, collected by Greta Abrahamsson. Published by Shriv & Ritboks Aktiebolaget, Stockholm—Göteborg. 18 pages, 200 designs, 7 x 8¼ American distributor, Bonniers Inc., New York. $1.50.

Bauhaus

(*Continued from page 63*)

modern industrial design. As a first step to this, students were given various materials and told to do something—*anything*—with them in order to get the feel of the material.

Through Anni Alber's work as a teacher at Black Mountain College in North Carolina, and as a weaver and designer for the textile industry, the influence of the Bauhaus has been widely felt in the development of American handweaving.

A comprehensive collection of her weaving is now on a tour of American museums, following an initial showing two years ago at the Museum of Modern Art.

The school itself, organized at the beginning of the German Republic and disappearing with the National Socialists, was something of a *Kunstgewerbe Kindergarten* and was probably always better known for its teachers than it was for its pupils. Doubtless it is also mainly due to the fervid efforts of these teachers that the memory of the Bauhaus has not long since been forgotten.

Incidentally, *Bauhaus* originally designated the living quarters built for the stone masons, preparatory to the construction of a medieval castle.

The latter part of the book is printed entirely in a lower case type, a fad which some of us may recall hit this country about 1929, and from which every now and then we still hear a faint echo.

Anyone interested in this small but exceedingly well publicized segment in the development of contemporary design, for the most part design for machine fabrication, will enjoy this complete, although possibly nostalgic coverage of the Bauhaus activities under the Gropius regime. The sundry fields of their experiments are shown by numerous illustrations accompanied by a brief text. Among the crafts represented are weaving, pottery, metal working and furniture making.

Bauhaus 1919-1928, Edited by Herbert Bayer, Walter Gropius and Ise Gropius. 7½ by 10, 224 pages, 500 illustrations. Published by Charles T. Branford Company, Boston, $5.50.

Courses in Weaving

City College, Midtown Center, New York, is offering intensive 2-week courses in handweaving until October 2, directed by Herbert D. Wojan, assisted by Sonja J. Belin. Gladys Rogers Brophil will have a 2-week workshop July 28-August 9, at Baldwin, Michigan. The Fashion Institute of Technology, New York, will initiate a handweaving course next fall, with Lili Blumenau instructing.

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Maria Mundal's Studio, 5413 Fifth Avenue, Brooklyn 20, N. Y., will be closed for the summer. Watch for advertisement in the fall issue.

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WHERE TO SELL HANDCRAFTS, $1.50. 1952 Directory for selling craft products. Branford Editions, 551 Boylston Street, Boston 16, Mass.

WEAVERS—Sell your surplus yarns and equipment through classified columns of HANDWEAVER AND CRAFTSMAN at a reasonable charge. Help us meet the requests for second hand equipmnt. Send in your copy now for the **Fall** issue. HANDWEAVER AND CRAFTSMAN, 246 Fifth Avenue, New York 1, N. Y. Tel. OR 9-2748.

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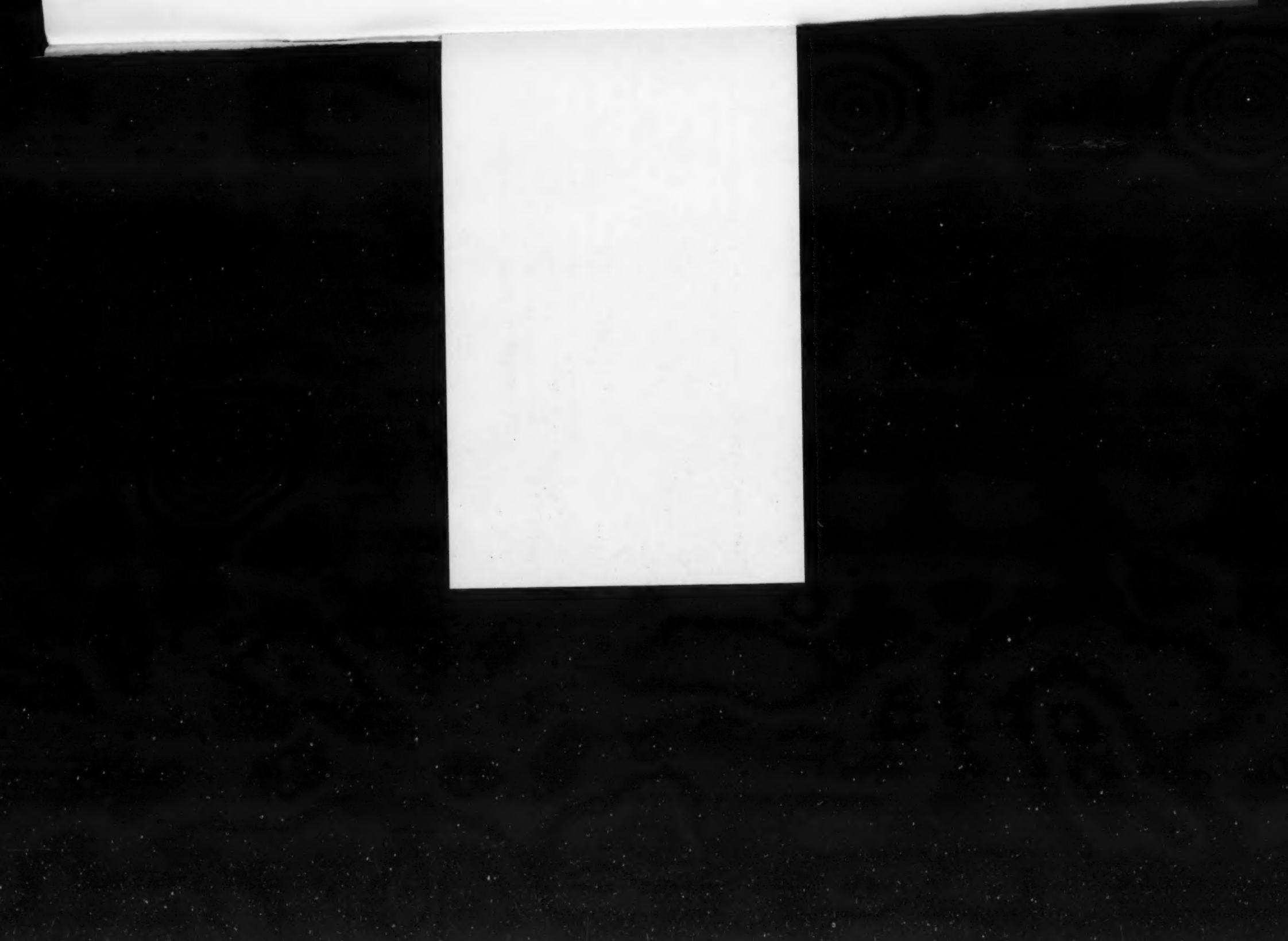

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